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A HANDBOOK OF HEART TERMS

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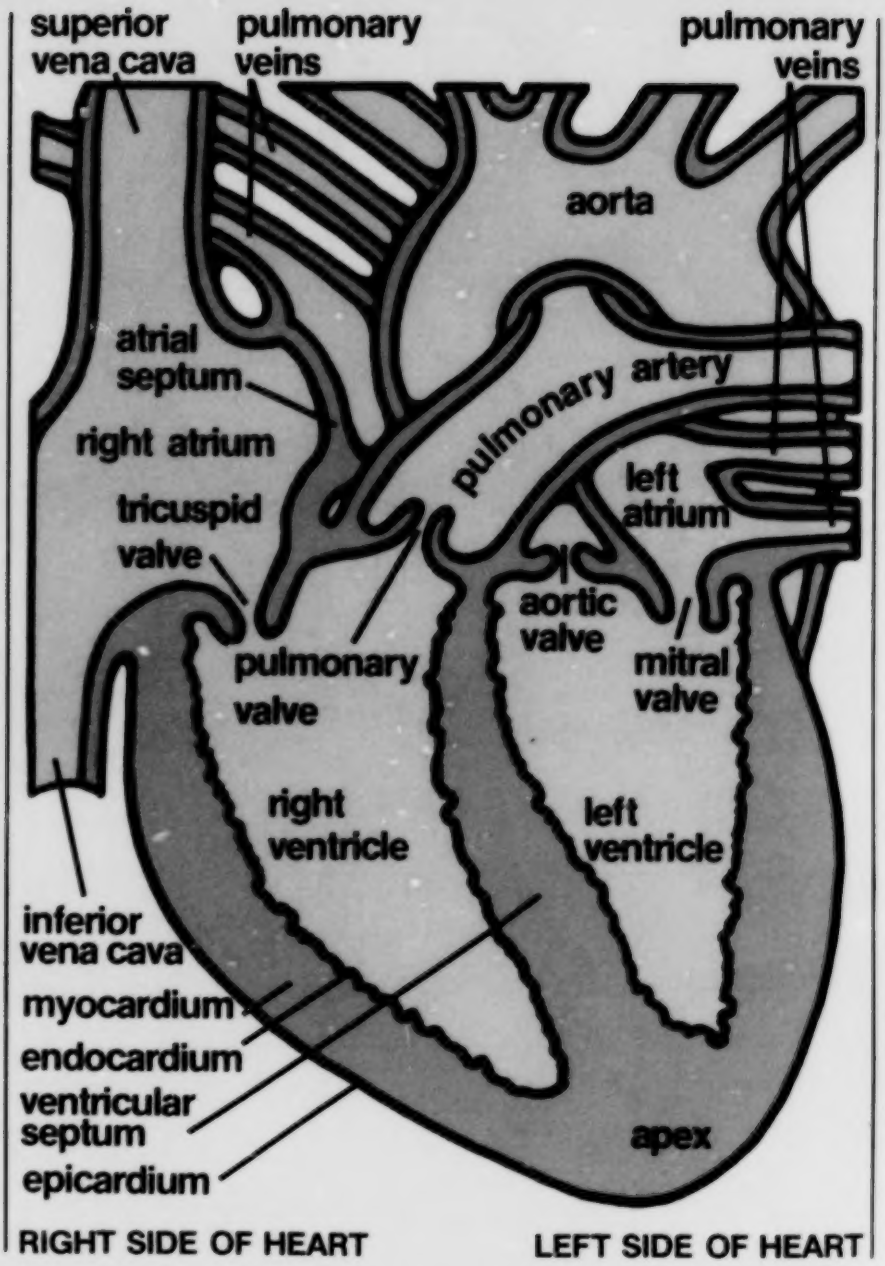
superior vena cava
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pulmonary valve
right ventricle
left ventricle
inferior vena cava
myocardium
endocardium
ventricular septum
epicardium
apex
RIGHT SIDE OF HEART
LEFT SIDE OF HEART

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A HANDBOOK OF HEART TERMS was written to give clear definitions of technical terms in nontechnical language. It is meant for use in libraries, schools and colleges, hospitals, communities, and homes by individuals who need to read, write, teach or learn more easily about heart subjects.

The Handbook contains a selection of words and phrases commonly used in the heart field. They were chosen on the basis of frequency of use and the possibility of general unfamiliarity or ambiguity.

Included are words from medicine, anatomy, physiology, instrumentation and pharmacology and some special terms used by certain related professions in dealing with the subject of heart disease. The terms are in alphabetical order. Most are followed by a phonetic spelling to indicate the preferred pronunciation; several are illustrated when necessary for clarity.

A Note on Pronunciation: one accent mark (') follows the primary accent, two (") indicate the secondary accent and a hyphen (-) follows unstressed syllables, as in (ad"ren-er'jik).

Prepared by the
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Bethesda, Maryland 20014

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READEX FICHE

A

ADRENAL GLANDS *(ah-dre'nal)*
A pair of endocrine (hormone-secreting) glands that sit atop the kidneys. The inner portion of each—the adrenal medulla—secretes norepinephrine and epinephrine. Epinephrine is a heart stimulant and norepinephrine is a powerful blood vessel constrictor. The outer shell—the adrenal cortex—secretes aldosterone, cortisone, and other steroid hormones that influence the body's handling of salt, water, carbohydrates and other aspects of metabolism.

ADRENALIN *(ah-dren'ah-lin)*
See Epinephrine.

ADRENERGIC BLOCKING AGENTS *(ad"ren-er'jik)*
Drugs which block the normal response of an organ or tissue to nerve impulses transmitted by the adrenergic nervous system (more or less the same as the sympathetic nervous system). Blocking adrenergic nerves to the heart and blood vessels tends to decrease heart rate and the vigor of heart contraction and to suppress the constriction of blood vessels. Adrenergic blocking agents are often used to treat angina pectoris (since by reducing heart work they reduce its need for oxygen). Some are also used to treat arrhythmias and to control high blood pressure, especially when it is accompanied by a hyperactive heart.

There are two classes of these drugs, alpha- and beta-adrenergic blocking agents. Both can be used in cardiovascular disorders, although beta-adrenergic blocking agents are used more often; of these, propranolol is the most common.

AGE-ADJUSTED DEATH RATE
See Mortality Rate, Age-Adjusted.

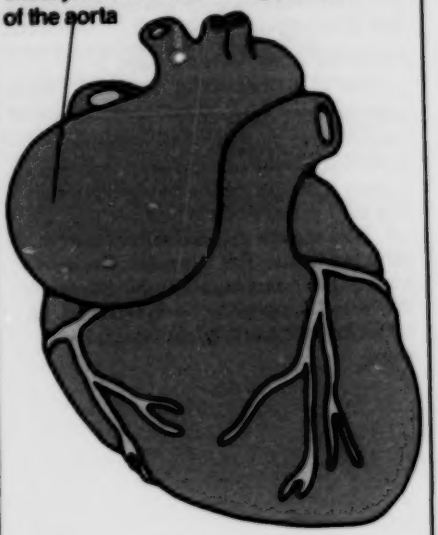
AGE-SPECIFIC DEATH RATE
See Mortality Rate, Age-Specific.

ALDOSTERONE *(al-dos'ter-on OR al"do-ster'on)*
A hormone secreted by the adrenal cortex that promotes the retention of salt and water by the kidneys. Aldosteronism, or excessive secretion of this hormone, may cause an increase in blood pressure. In this case drugs known as aldosterone antagonists can be given; one example is spironolactone.

ALDOSTERONISM *(al"do-ster'on-izm")*
See Aldosterone.

AMINE *(ah-meen' OR am'in)*
An organic compound that may be derived from ammonia by the replacement of one or more of the hydrogen atoms by hydrocarbon fractions.

ANEURYSM *(an'u-rizm)*
A ballooning-out of the wall of a vein, an artery or the heart due to weakening of the wall by disease, traumatic injury or an abnormality present at birth.



ANGINA PECTORIS *(an-ji'nah OR an'ji-nah pek'tor-is)*
An episode of chest pain due to a temporary discrepancy between the supply and demand of oxygen to the heart. This may be due to low oxygen levels in the blood (from smoking or respiratory disease), to a restricted bloodflow to the heart (coronary insufficiency) or to an increase in heart work beyond normal levels. Most often, angina pectoris is a chronic condition caused by a blood supply restricted by hardening and narrowing of the coronary arteries supplying the heart muscle (coronary atherosclerosis).

An angina attack is not to be confused with a heart attack (myocardial infarction), which results from a severe and prolonged lack of oxygenated blood to a part of the heart.

ANGIOCARDIOGRAPHY *(an"je-o-kar"de-og'rah-fe)*
A diagnostic method involving injection of an x-ray dye into the bloodstream. Chest x-rays taken after the injection show the inside dimensions of the heart and great vessels outlined by the liquid. **See Cineangiography.**

ANOREXIA *(an"o-rek'se-ah)*
Lack or loss of appetite for food.

ANOXIA *(an-ok'se-ah)*
Literally, no oxygen. This condition most frequently occurs when the blood supply (and hence the oxygen supply) to a part of the body is completely cut off. This results in the death of the affected tissue. For example, a specific area of the heart muscle may die when the blood supply has been blocked, as by a clot in the artery supplying that area.

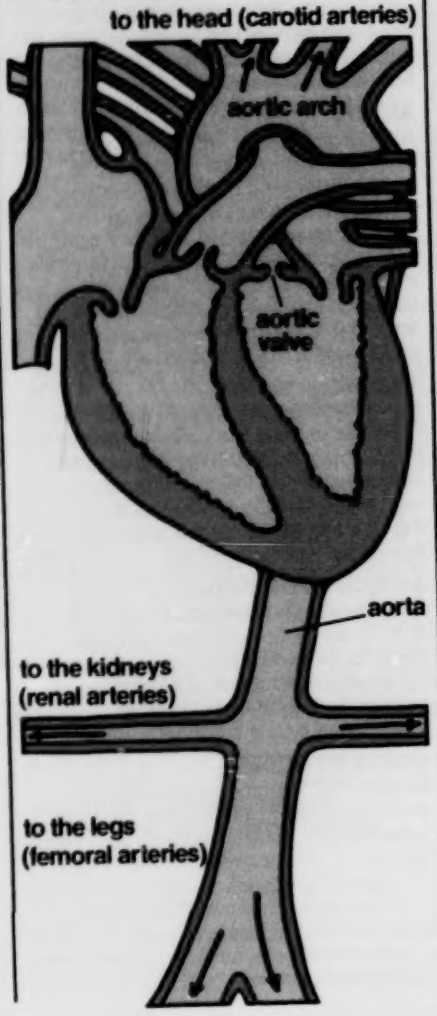
ANTIARRHYTHMIC DRUGS *(an"ti-ah-rith'mic)*
Drugs which are used to treat disorders of the heart rate and rhythm. The drugs lidocaine, procaine amide, quinidine, digitalis, and propranolol are often given to correct arrhythmias. Atropine and isoproterenol are used in cases of abnormally slow heart rates.

ANTICOAGULANT *(an"ti-ko-ag'u-lant)*
A drug which delays clotting of the blood (coagulation). When given in cases of a blood vessel plugged up by a clot, it tends to prevent new clots from forming, or the existing clots from enlarging, but does not dissolve an existing clot. Examples are heparin and coumarin derivatives.

ANTIHYPERTENSIVE DRUGS *(an"ti-hi"per-ten'siv)*
Drugs which can be used to control high blood pressure (hypertension). Those most often given are the diuretics (primarily the thiazides), which promote the natural elimination of excess fluids in the tissues and circulation. Some of the other major antihypertensive drugs lower blood pressure by their direct or indirect dilating effect on the arteries. Hydralazine, for example, directly relaxes the tiny muscles in the artery walls. Other drugs block or damper the nerves which signal the arteries to constrict. Some of these are reserpine, methyldopa and guanethidine. The drug propranolol slows the heartbeat, decreases the force of the heart's contraction and thus lowers the blood pressure.

ANXIETY *(ang-zi'e-te)*
A feeling of apprehension.

AORTA *(a-or'tah)*
The main trunk artery which receives blood from the left ventricle of the heart. It originates from the base of the heart, arches up over the heart like a cane handle, and passes down through the chest and abdomen in front of the spine. It gives off many lesser arteries which conduct blood to all parts of the body except the lungs.



AORTIC ARCH *(a-or'tik)*
The part of the aorta, or large artery leaving the heart, which curves up like the handle of a cane over the top of the heart.

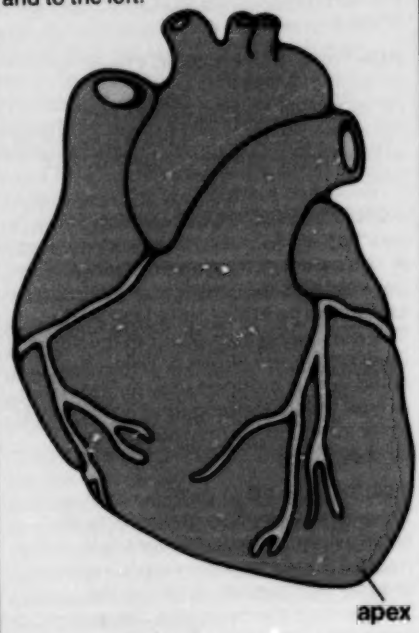
AORTIC INSUFFICIENCY *(a-or'tik in"su-fish'en-se)*
An improper closing of the valve between the aorta and the left ventricle of the heart permitting a backflow of blood.

AORTIC STENOSIS *(a-or'tik ste-nos'sis)*
A narrowing of the valve opening between the left ventricle of the heart and the large artery called the aorta. The narrowing may occur at the valve itself or slightly above or below the valve. Aortic stenosis may be the result of scar tissue forming after a rheumatic fever infection, or may have other causes.

AORTIC VALVE *(a-or'tik)*
Valve at the junction of the aorta, or large artery, and the left ventricle of the heart. Formed by three opposing cup-shaped membranes, it allows the blood to flow from the heart into the aorta and prevents a backflow. **See Valve.**

AORTOGRAPHY *(a"or-tog'rah-fe)*
X-ray examination of the aorta (main artery conducting blood from the left ventricle of the heart to the body) and its main branches. This is made possible by the injection of a dye which is opaque to x-rays.

APEX *(a'peks)*
The blunt rounded end of the heart, normally directed downward, forward, and to the left.



ARCUS *(ar'kus)*
A curved or bowlike structure. **See Corneal Arcus.**

ARRHYTHMIA *(ah-rith'me-ah)*
Any variation from the normal rhythm of the heartbeat.

ARTERIAL BLOOD *(ar-te're-al)*
Oxygenated blood. The blood is oxygenated in the lungs and passes from the lungs to the left side of the heart via the pulmonary veins. It is then pumped by the left side of the heart into the arteries which carry it to all parts of the body. **See Venous Blood.**

ARTERIOLES *(ar-te're-ols)*
The smallest arterial vessels (about 0.2 mm. or 1/125 inch in diameter) resulting from repeated branching of the arteries. They conduct the blood from the arteries to the capillaries.

ARTERIOSCLEROSIS *(ar-te"re-o-skle-ro'sis)*
A group of diseases characterized by thickening and loss of elasticity of artery walls. This may be due to an accumulation of fibrous tissue, fatty substances (lipids) and/or minerals. **See Atherosclerosis.**

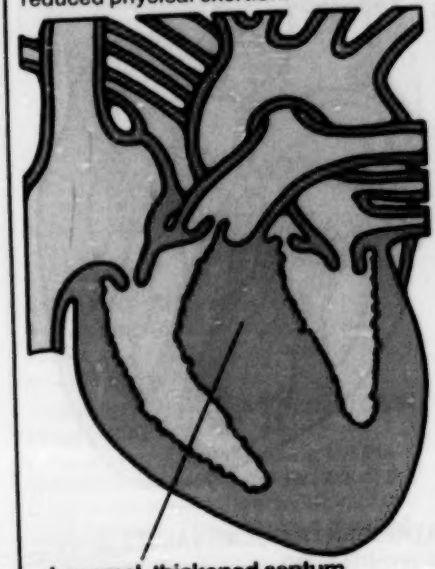
ARTERITIS *(ar"te-ri'tis)*
A general term for inflammation of arteries. This may be secondary to some underlying condition (such as an infectious disease) or it may be the primary phenomenon. Primary arteritis includes polyarteritis nodosa (which is disseminated throughout the body), temporal arteritis (occurring at the temples) and aortitis (arteritis of the aorta and its major branches).

ARTERY *(ar'ter-e)*
Blood vessels which carry blood away from the heart to the various parts of the body. They usually carry oxygenated blood except for the pulmonary artery which carries unoxygenated blood from the heart to the lungs for oxygenation. **See Vein.**

ASCHOFF BODIES *(ash'of)*
Spindle-shaped nodules, occurring most frequently in the tissues of the heart, often formed during an attack of rheumatic fever. Named after Ludwig Aschoff (1866-1942), a German pathologist who described them.

ASSIST DEVICES
Special mechanical devices used to provide pumping assistance to a heart weakened by acute heart attack or heart failure.

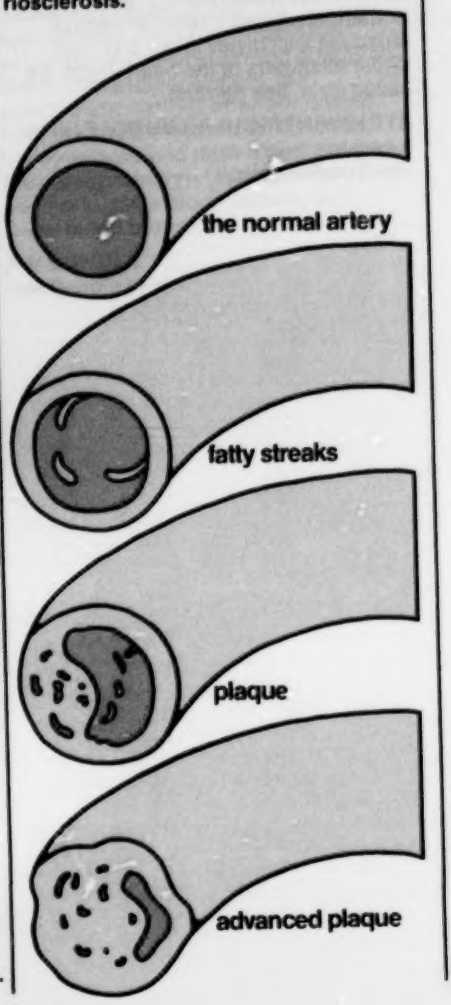
ASYMMETRIC SEPTAL HYPERTROPHY (ASH) *(a"sim-met'rik sep'tal hi-per'tro-fe)*
Also called idiopathic hypertrophic subaortic stenosis (IHSS). A disease of the heart muscle (cardiomyopathy) in which there is an asymmetric enlargement (hypertrophy) of the walls of the left ventricle—the interventricular septum thickens more than the outer wall does. This makes the contraction of the left ventricle less effective and obstructs bloodflow to the aorta (and therefore to all parts of the body including the heart muscle itself). This condition is fairly common, is sometimes hereditary, and can create such symptoms as chest pain and dizziness. Treatment, when necessary, includes surgery, drugs or reduced physical exertion.



abnormal, thickened septum (asymmetric septal hypertrophy)

ATHEROMA *(ath"er-o'mah)*
Also called plaque. A deposit of fatty (and other) substances in the inner lining of the artery wall, characteristic of atherosclerosis. Plural is **Atheromata** *(ath"er-o-mah'ta)*. **See Atherosclerosis.**

ATHEROSCLEROSIS *(ath"er-o"skle-ro'sis)*
A kind of arteriosclerosis in which the inner layer of the artery wall is made thick and irregular by deposits of a fatty substance. These deposits (called atheromata or plaques) project above the surface of the inner layer of the artery, and thus decrease the diameter of the internal channel of the vessel. **See Arteriosclerosis.**



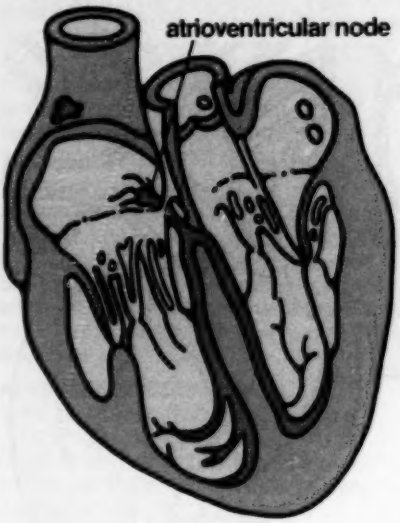
ATRIAL FIBRILLATION *(a"tre-al fi-bri-la'shun)*
See Fibrillation.

ATRIAL FLUTTER *(a'tre-al flut'er)*
An arrhythmia which occurs occasionally in healthy hearts, but more commonly in diseased hearts. It results in a rapid regular heartbeat. Drugs are often used to slow the rate.

ATRIAL SEPTUM *(a'tre-al sep'tum)*
Sometimes called interatrial septum. Muscular wall dividing left and right upper chambers of the heart which are called atria. **See Septum.**

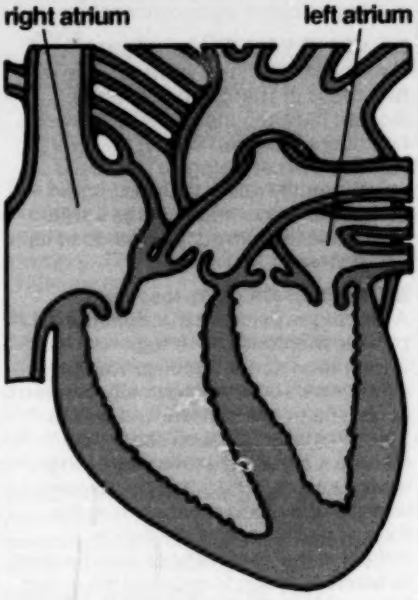
ATRIOVENTRICULAR BUNDLE *(a"tre-o-ven-trik'u-lar)*
See Bundle of His.

ATRIOVENTRICULAR NODE *(a"tre-o-ven-trik'u-lar)*
A small mass of special muscular fibers at the base of the wall between the two upper chambers of the heart. It forms the beginning of the Bundle of His which is the only known normal direct muscular connection between the upper and the lower chambers of the heart. The electrical impulses controlling the rhythm of the heart are generated by the pacemaker, conducted through the muscle fibers of the right upper chamber of the heart to the atrioventricular node, and then conducted to the lower chambers of the heart by the Bundle of His. **See Bundle of His and Pacemaker.**



ATRIOVENTRICULAR VALVES *(a"tre-o-ven-trik'u-lar)*
The two valves, one in each side of the heart, between the upper and lower chambers. The one in the right side of the heart is called the tricuspid valve, and the one in the left side is called the mitral valve. **See illustration inside front cover.**

ATRIUM *(a'tre-um)*
Formerly "auricle." One of the two upper chambers of the heart. The right atrium receives unoxygenated blood from the body. The left atrium receives oxygenated blood from the lungs.



ATROPINE *(at'ro-peen)*
A drug used to treat, among other things, an abnormally slow heart rate; an antiarrhythmic drug.

AUENBRUGGER, LEOPOLD JOSEPH (1722-1809)
Austrian physician who invented the technique of tapping the surface of the body to determine the condition of organs beneath. The technique is called percussion.

AURICLE *(aw're-kl)*
Archaic term for atrium.

AUSCULTATION *(aws"kul-ta'shun)*
The act of listening to sounds within the body, usually with a stethoscope.

AUTONOMIC NERVOUS SYSTEM *(aw"to-nom'ik)*
Sometimes called the involuntary nervous system. The nerves of this system regulate tissues and functions not normally under conscious control (heartbeat, blood pressure, etc.). It consists of two divisions, the sympathetic and parasympathetic, which usually have opposing effects on the cardiovascular system: the sympathetic nerves, when stimulated, tend to increase heart rate, constrict blood vessels, and raise blood pressure; the parasympathetic tend to slow the heart rate, relax blood vessels, and lower blood pressure.

A-V BUNDLE
See Bundle of His.

B

BACTERIAL ENDOCARDITIS *(bak-te're-al en"do-kar-di'tis)*
An inflammation of the inner layer of the heart caused by bacteria; it may be a complication of another infectious disease, an operation or injury. The lining of the heart valves is most frequently affected, most commonly valves with previous damage from rheumatic disease or congenital abnormality.

BARLOW'S SYNDROME *(bar'loz)*
Also called floppy mitral valve syndrome as well as systolic click-murmur syndrome, billowing mitral leaflet syndrome, and prolapsed mitral valve leaflet syndrome (among other terms). A structural alteration of the mitral valve (which normally permits a one-way flow of blood from the left atrium down to the left ventricle of the heart) leading to stretching and weakness of the cusps or valve leaflets. Thus when the heart pumps, some of the blood leaks back into the left atrium instead of being pushed through the aorta to the body.

This syndrome is associated with unusual chest discomfort and arrhythmias.

BARORECEPTORS *(bar"o-re-sep'torz)*
Sensory nerve endings which respond to changes in pressure, as those in the walls of blood vessels.

BEHAVIOR, TYPE A AND TYPE B
Two kinds of behavior patterns, as recognized in medicine. Type A behavior is characterized by high degrees of competitiveness, aggressiveness and feelings of the pressure of time. This type of behavior is thought by some cardiologists to be a risk factor in the development of coronary heart disease. Individuals with the converse Type B behavior are more easygoing and contemplative and more easily satisfied.

BENZOTHIADIAZIDES *(ben"zo-thi"ah-di'ah-sidz)*
See Thiazides.

BETA-BLOCKING AGENTS *(bay'tah)*
Also called beta-adrenergic blocking agents. **See Adrenergic Blocking Agents.**

BICUSPID VALVE *(bi-kus'pid)*
Usually called mitral valve. A valve of two cusps or triangular segments, located between the upper and lower chambers in the left side of the heart. However, in cardiology a "bicuspid valve" usually refers to the common congenital abnormality of the aortic valve's having two cusps instead of its usual three.

BIOFEEDBACK *(bi"o-feed'bak)*
A technique using instrumentation to provide moment-to-moment information about bodily processes which a person is not normally aware of, so that he or she can learn to control them. For example, one setup may include a blood pressure measuring device and colored lights to indicate whether the blood pressure is in the high or normal range. Evidence indicates that biofeedback may be used to teach a person to regulate his or her heart rate, blood pressure, bloodflow, skin temperature, and the activity of the gastrointestinal tract.

This term also refers to the normal and physiologic mechanisms the body uses to regulate myriad physiologic phenomena.

BLOOD PRESSURE
The force the flowing blood exerts against the artery walls. Two pressures are usually measured:

1. The upper, or **systolic**, pressure occurs each time the heart contracts (systole) and pumps blood into the aorta.
2. The lower, or **diastolic**, pressure occurs when the heart relaxes (diastole) and refills with blood flowing in from the large veins, the venae cavae.

The blood pressure is therefore expressed by two numbers, with the upper one over the lower one; for example, 120/80, which is spoken as "120 over 80."

BLUE BABIES
Babies having a blueness of skin (cyanosis)caused by insufficient oxygen in the arterial blood. This often indicates a heart defect, but may have other causes such as premature birth or impaired respiration.

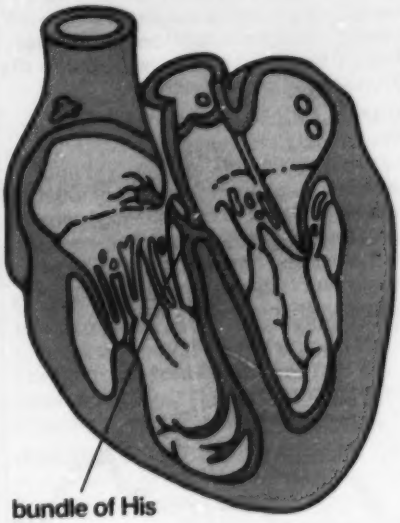
BRADYCARDIA *(brad-e-kar'de-ah)*
Abnormally slow heart rate. Generally, anything below 60 beats per minute is considered bradycardia.

BRIGHT, RICHARD (1789-1858)
English physician who demonstrated the association of heart disease to kidney disease.

BUERGER'S DISEASE *(ber'gerz)*
A disease of the blood vessels which is more commonly called thromboangiitis obliterans. **See Thromboangiitis Obliterans.**

BUERGER'S SYMPTOM *(ber'gerz)*
In thromboangiitis obliterans (Buerger's disease), the pain in the affected leg when the patient is lying down is relieved only by letting the leg hang over the side of the bed. **See Thromboangiitis Obliterans.**

BUNDLE OF HIS *(hiss)*
Also called atrioventricular bundle or A-V bundle. A bundle of specialized muscle fibers running from a small mass of muscular fibers (atrioventricular node) between the atria of the heart down to the ventricles. It is the only known normal direct muscular connection between the atria and the ventricles, and serves to conduct impulses for the rhythmic heartbeat from the atrioventicular node to the heart muscle. Named after Wilhelm His, German anatomist.



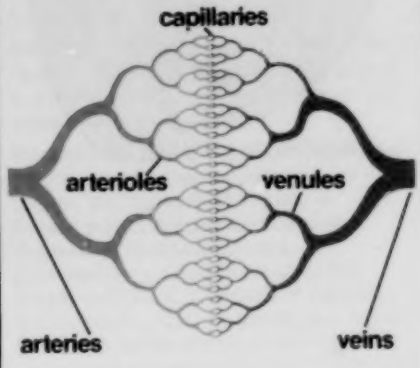
C

CAESALPINUS, ANDREAS (1519?-1603)
First to use the term "circulation" in connection with the movement of the blood. However, he still believed in many of the classical theories taught by Galen.

CALORIE *(kal'o-re)*
Sometimes called large or kilocalorie. Unit used to express food energy. The amount of heat required to raise the temperature of 1 kilogram of water 1 degree Centigrade.

A high caloric diet has a prescribed caloric value above the total daily energy requirement. A low caloric diet has a prescribed caloric value below the total energy requirement.

CAPILLARIES *(kap'i-lar"ez)*
The tiniest blood vessels. Capillary networks connect the arterioles and venules. Capillary walls are composed of a single layer of cells through which oxygen and nutritive materials pass out to the tissues, and carbon dioxide and waste products are admitted from the tissues into the bloodstream.

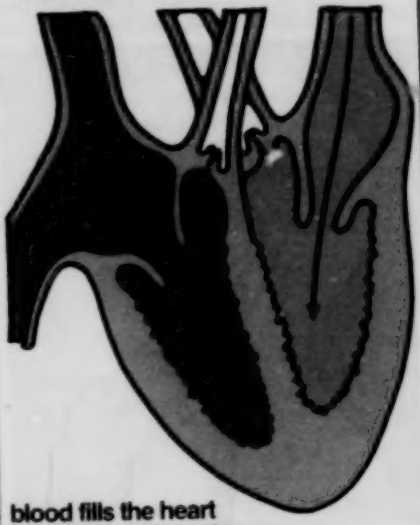


CARBON DIOXIDE *(kar'bon di-ox'ide)*
A waste product of chemical reactions in the cells. It passes from the cells to the blood which eventually releases it in the lungs to be breathed out.

CARDIAC *(kar'de-ak)*
Pertaining to the heart. Sometimes refers to a person who has heart disease.

CARDIAC ARREST
Cessation of the heartbeat. As a result, blood pressure drops abruptly and the circulation of the blood ceases. Until recently, this was always fatal. Today, the heart can be stimulated to start beating again and death averted under certain circumstances. **See Cardiopulmonary Resuscitation.**

CARDIAC CYCLE
A cardiac cycle is the series of mechanical and electrical events associated with one heartbeat. One cycle or beat lasts about 0.9 seconds and includes contraction and pumping, relaxation and filling actions.



blood fills the heart as the ventricles relax

the ventricles contract and pump the blood out

CARDIAC OUTPUT
The amount of blood pumped by the heart per minute.

CARDIAC RESERVE
The difference between the cardiac output at rest (about 5 quarts pumped by one ventricle per minute) and at the maximum physical effort (as much as 25 quarts per minute or more).

CARDIOLOGIST *(kar-de-ol'o-jist)*
A specialist in the diagnosis and treatment of heart disease.

CARDIOLOGY *(kar"de-ol'o-je)*
The study of the heart and its functions in health and disease.

CARDIOMYOPATHY *(kar"de-o-mi-op'ah-the)*
A general diagnostic term for diseases that involve mainly the myocardium (heart muscle) and not other heart structures (such as the valves, coronary vessels or pericardium). They may be caused by known toxic or infectious agents. For the majority of cases, however, the cause is not known.

CARDIOPULMONARY RESUSCITATION (CPR) *(kar"de-o-pul'mo-ner-e re-sus"i-ta'shun)*
Also called Basic Life Support. An emergency measure used by one or two people to artificially maintain another person's breathing and heartbeat in the event these functions suddenly stop. CPR consists of keeping the airway open and performing rescue breathing and external cardiac compression (heart massage) to keep oxygenated blood circulating through the body. **See Heart Massage.**

CARDIOVASCULAR *(kar"de-o-vas'ku-lar)*
Pertaining to the heart and blood vessels.

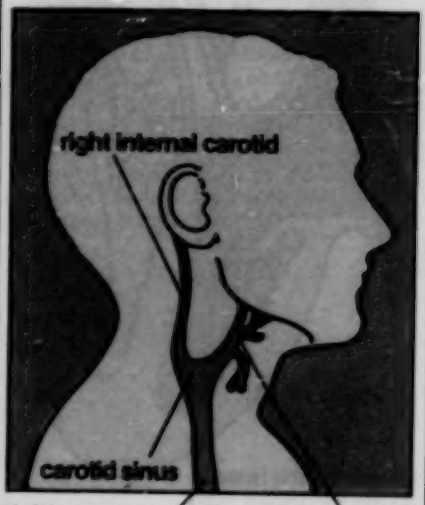
CARDIOVASCULAR-RENAL DISEASE *(kar"de-o-vas'ku-lar re'nal)*
Disease involving the heart, blood vessels, and kidneys.

CARDIOVERSION *(kar'de-o-ver"zhun)*
The application of very brief discharges of direct-current electricity across the intact chest and into the heart muscle in order to stop a cardiac arrhythmia (rhythm disorder) and allow the normal heart rhythm to take over. This technique is most often used as an emergency measure, but can also be used to correct chronic conditions.

CARDIOVERTER *(kar'de-o-ver"ter)*
An instrument capable of delivering a brief direct-current electric shock. Used to terminate certain cardiac arrhythmias. **See Cardioversion.**

CARDITIS *(kar-di'tis)*
Inflammation of the heart.

CAROTID ARTERIES *(kah-rot'id)*
The left and right common carotid arteries are the principal arteries supplying the head and neck. Each has two main branches, the external carotid artery and the internal carotid artery.



CAROTID BODY *(kah-rot'id)*
A tiny (5 mm. or 1/5 inch) oval mass of cells located in each carotid sinus, that is, at the branching point in the arteries supplying the head and neck. The carotid bodies contain nerve endings known as chemoreceptors which are sensitive to oxygen and carbon dioxide content and to pH of the blood. For example, when the oxygen content of the blood is reduced, the carotid bodies cause an increase in respiration rate.

CAROTID SINUS *(kah-rot'id si'nus)*
On either side of the neck, a slight dilation at the point where the internal carotid artery branches from the common carotid artery. These arteries supply the head and neck with blood. The carotid sinus contains the carotid body and many baroreceptors, special nerve endings sensitive to changes in blood pressure to keep it relatively constant. For example, if blood pressure starts to rise, baroreceptors in the carotid sinuses are stimulated to reduce the rate and force of heart contraction and to dilate the arteries—thus lowering the blood pressure. **See Carotid Arteries and Carotid Body.**

CATHETER *(kath'e-ter)*
A thin, flexible tube which can be guided into body organs. A cardiac catheter is made of woven plastic, or other material to which blood will not adhere, and is inserted into a vein or artery (usually of an arm or a leg) and gently threaded into the heart. Its progress can be watched on a fluoroscope.

Cardiac catheters can be used for diagnosis (to take samples of blood or pressure readings in the chambers of the heart) or for treatment (to implant the electrodes of a pacemaker or to administer a drug).

catheter

CATHETERIZATION *(kath"e-ter-i-za'shun)*
In cardiology, the process of introducing a thin, flexible tube (a catheter) into a vein or artery and guiding it into the heart for purposes of examination or treatment.

CEREBRAL VASCULAR ACCIDENT *(ser'e-bral OR se-re'bral vas'ku-lar)*
Sometimes called cerebrovascular accident, apoplectic stroke, or simply stroke. An impeded blood supply to some part of the brain, generally caused by one of the following four conditions:

1. A blood clot forming in the vessel (cerebral thrombosis).
2. A rupture of the blood vessel wall (cerebral hemorrhage).
3. A piece of clot or other material from another part of the vascular system which flows to the brain and obstructs a cerebral vessel (cerebral embolism).
4. Pressure on a blood vessel as by a tumor.

For illustration see Stroke.

CEREBROVASCULAR *(ser"e-bro-vas'ku-lar)*
Pertaining to the blood vessels in the brain.

CHAGAS HEART DISEASE *(chag'as)*
A form of heart disease resulting from an infection by a microscopic parasite found in South America.

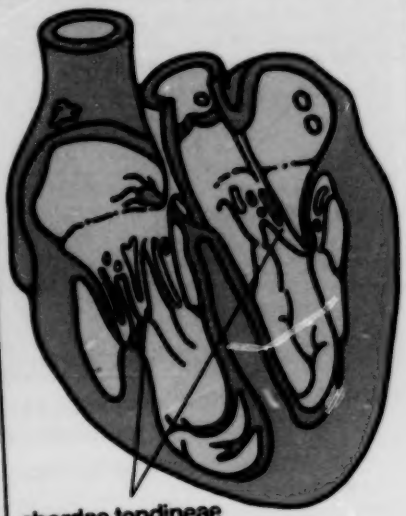
CHEMOTHERAPY *(ke"mo-ther'ah-pe)*
The treatment of disease by administering chemicals. Frequently used in the phrase "chemotherapy of hypertension," i.e., the treatment of high blood pressure by the use of drugs.

CHLOROTHIAZIDE *(klo"ro-thi'ah-zid)*
One of the thiazide diuretics (drugs which promote the excretion of urine). Sometimes used to treat high blood pressure and edema (waterlogged tissues).

CHOLESTEROL *(ko-les'ter-ol)*
A fat-like substance found in animal tissue. In blood tests the normal level for Americans is assumed to be between 180 and 230 milligrams per 100 cc. A higher level is often associated with high risk of coronary atherosclerosis.

CHOLESTYRAMINE *(ko"les-ti'rah-meen)*
A drug used to lower blood levels of the lipid cholesterol. **See Lipid-Lowering Drugs.**

CHORDAE TENDINEAE *(kor'di ten'dun-i)*
Fibrous chords which serve as guy ropes to hold the valves between the upper and lower chambers. They stretch from the cusps of the valves to muscles called papillary muscles in the walls of the lower heart chambers.



chordae tendineae

CHOREA *(ko-re'ah)*
Involuntary, irregular twitching of the muscles, sometimes associated wth rheumatic fever. Also called St. Vitus Dance, or Sydenham's Chorea.

CINEANGIOCARDIOGRAPHY *(sin"e-an"je-o-kar"de-og'rah-fe)*
A diagnostic method similar to angiocardiography except that instead of still x-ray pictures, motion pictures of the heart are made by fluoroscopy, as an injected opaque liquid is carried through the heart and blood vessels. **See Angiocardiography.**

CIRCULATORY *(ser'ku-lah-to"re)*
Pertaining to the heart, blood vessels, and the circulation of the blood.

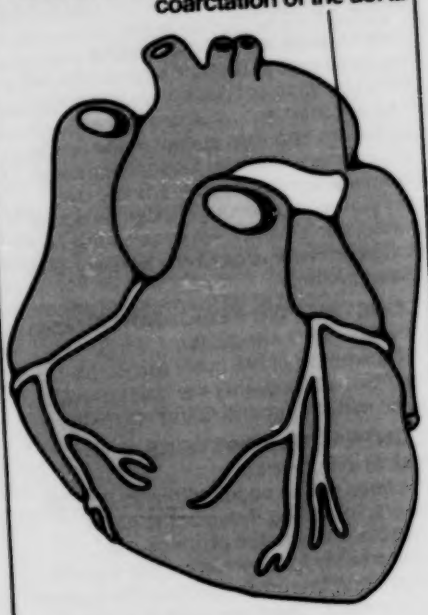
CLAUDICATION *(klaw"di-ka'shun)*
Pain and lameness or limping. Can be caused by defective circulation of the blood in the vessels of the limbs. **See Intermittent Claudication.**

CLOFIBRATE *(klo-fi'brat)*
A drug generally used to lower elevated levels of triglyceride lipids in the blood. **See Lipid-Lowering Drugs.**

CLUBBED FINGERS *(klubd)*
Fingers with a short broad tip and overhanging nail, somewhat resembling a drumstick. This condition is sometimes seen in children born with certain kinds of heart defects and in adults with heart, lung or gastrointestinal diseases. It may also be familial and insignificant.

COAGULATION *(ko-ag"u-la'shun)*
Process of changing from a liquid to a thickened or solid state. The formation of a clot.

COARCTATION OF THE AORTA *(ko"ark-ta'shun of the a-or'ta)*
Literally a pressing together or narrowing of the aorta, the main trunk artery which conducts blood from the heart to the body. One of several types of congenital heart defects.



COLLATERAL CIRCULATION *(ko-lat'er-al ser"ku-la'shun)*
Circulation of the blood through nearby smaller vessels when a main vessel has been blocked up.

COMMISSUROTOMY *(kom"e-shur-ot'o-me)*
An operation to widen the opening in a heart valve which has become narrowed by scar tissue. The individual flaps of the valve are spread apart along the natural lines of their closure by a blunt instrument. This operation was developed to correct rheumatic heart disease. **See Mitral Valvulotomy.**

CONGENITAL ANOMALY *(kon-jen'i-tal ah-nom'ah-le)*
An abnormality present at birth.

CONGESTIVE HEART FAILURE *(kon-jes'tiv)*
"Heart failure" is a condition in which the heart is unable to pump its required amount of blood.

Heart failure is often congestive because loss of pumping power by the heart leads to congestion in the body tissues; fluid accumulates in the abdomen and legs and/or in the lungs (pulmonary edema). Congestive heart failure often develops gradually over several years, although it can be acute (short and severe). It can be treated by drugs or in some cases by surgery. **See Heart Failure.**

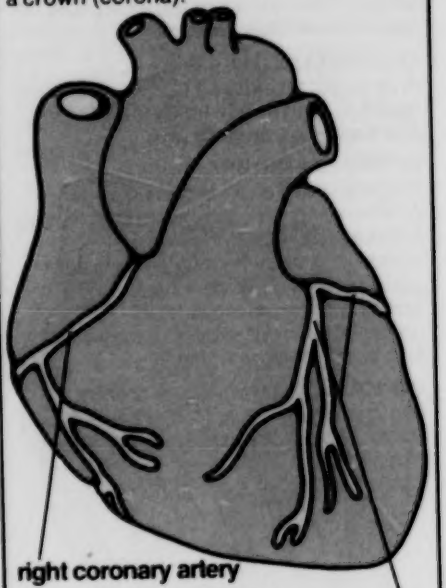
CONSTRICTIVE PERICARDITIS *(kon-strik'tiv per"i-kar-di'tis)*
A thickening of the outer sac of the heart which prevents the heart muscle from expanding and filling normally.

CONTRACTILE PROTEINS *(kon-trak'til pro'te-ins)*
Proteins which occur within all muscle fibers, including those of the heart muscle. Contractile proteins are responsible for shortening the muscle fibers and therefore causing the muscle to contract. There are several kinds of contractile proteins.

CORNEAL ARCUS *(kor'ne-al ar'kus)*
A hazy ring around the edge of the cornea (the transparent covering over the front of the eye). It can have a variety of causes, including exposure to irritating chemicals, viral or bacterial infections, and old age. It can also be a normal finding in certain racial backgrounds.

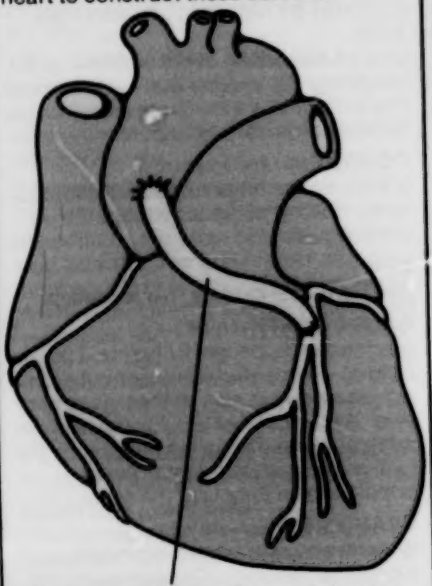
In addition, corneal arcus can be a sign of Type II or Type IV hyperlipoproteinemia, blood-lipid disorders associated with premature development of atherosclerosis (hardening of the arteries).

CORONARY ARTERIES *(kor'o-na-re)*
Arteries, arising from the base of the aorta, which conduct blood to the heart muscle. These arteries, and the network of vessels branching off from them, come down over the top of the heart like a crown (corona).



CORONARY ARTHEROSCLEROSIS *(ath"er-o"skle-ro'sis)*
Commonly called coronary heart disease. An irregular thickening of the inner layer of the walls of the arteries which conduct blood to the heart muscle. The internal channel of these arteries (the coronaries) becomes narrowed and the blood supply to the heart muscle is reduced. **See Atherosclerosis.**

CORONARY BYPASS SURGERY *(kor'o-na-re bi'pas)*
Surgery to improve the blood supply to the heart muscle when narrowed coronary arteries reduce flow of the oxygen-containing blood which is vital to the pumping heart. This reduction in bloodflow causes chest pain and leads to increased risk of heart attack. Thus coronary bypass surgery involves constructing detours through which blood can bypass narrowed portions of coronary arteries to keep the heart muscle supplied. Veins or arteries taken from other parts of the body where they are not essential are grafted onto the heart to construct these detours.



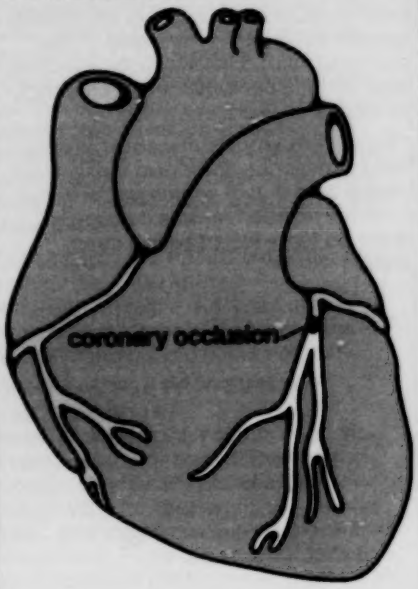
a bypass graft from the aorta to one of the coronary arteries

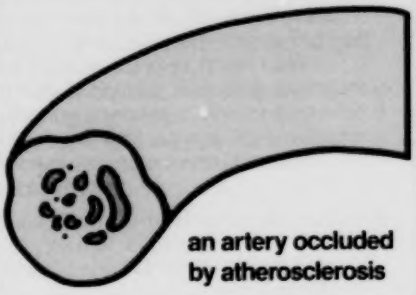
CORONARY HEART DISEASE
Also called coronary artery disease and ischemic heart disease. Heart ailments caused by narrowing of the coronary arteries and therefore a decreased blood supply to the heart (ischemia).

CORONARY INSUFFICIENCY *(in"su-fish'en-se)*
A condition which occurs whenever the coronary arteries (which supply the heart muscle with blood) do not provide oxygen adequate to the needs of the pumping heart. This may produce chest pain (angina pectoris) or a heart attack, or no pain may occur at all.

"*Acute* coronary insufficiency" is a term used to describe chest pain that is more severe than that of angina pectoris, but in which no heart muscle damage is done (as there would be in a heart attack).

CORONARY OCCLUSION *(o-kloo' zhun)*
An obstruction in a branch of one of the coronary arteries which hinders the flow of blood to some part of the heart muscle. This part of the heart muscle then dies because of lack of oxygen supply. Sometimes called a coronary heart attack or simply a heart attack. **See Heart Attack.**





an artery occluded by atherosclerosis

CORONARY THROMBOSIS *(throm-bo'sis)*
Formation of a clot in a branch of one of the arteries which conduct blood to the heart muscle (coronary arteries). A form of coronary occlusion. **See Coronary Occlusion.**

COR PULMONALE *(kor pul-mo-nal'e)*
Heart disease resulting from disease of the lungs or the blood vessels of the lungs. The lung problems cause high blood pressure in the pulmonary vessels (pulmonary hypertension). Thus the right ventricle enlarges because it must work harder to pump blood through the lungs.

CORVISART, JEAN NICOLAS (1755-1821)
One of the earliest of the modern cardiologists, and the first person to call him or herself a "heart specialist." Favorite physician to Napoleon.

COUMARIN *(koo'mah-rin)*
A class of chemical substances which delay clotting of the blood. An anticoagulant.

CPR
See Cardiopulmonary Resuscitation.

CRUDE DEATH RATE
Also called crude mortality rate. The ratio of total deaths to total population during a given period of time, such as a year. It is calculated by dividing the total number of deaths during the year by the mid-year population (estimated population on July 1) of the same year.

CYANOSIS *(si"ah-no'sis)*
Blueness of skin caused by insufficient oxygen in the blood. Oxygen is carried in the blood by hemoglobin, which is bright red when saturated with oxygen. When hemoglobin is not carrying oxygen, it is dark burgundy and is called reduced hemoglobin. The blueness of the skin occurs when the amount of reduced hemoglobin exceeds 5 grams per 100 cc. of blood.

D

DECOMPENSATION *(de"kom-pen-sa'shun)*
Inability of the heart to maintain adequate circulation, usually resulting in a waterlogging of tissues. A person whose heart is failing to maintain normal circulation is said to be "decompensated."

DEFIBRILLATION *(de-fib"ri-la'shun)*
Termination of atrial or ventricular fibrillation. Usually refers to treatment by the application of electric shock (cardioversion). **See Fibrillation and Cardioversion.**

DEPRESSANT *(de-pres'ant)*
Any drug which decreases functional activity.

DESCARTES, RENE (1596-1650)
Author of the first physiology textbook which accepted the theory of the circulation of the blood as described by William Harvey.

DEXTROCARDIA *(deks"tro-kar'de-ah)*
Two different types of congenital phenomena are often described as dextrocardia. The first is a condition more correctly termed "dextroversion" in which the heart is slightly rotated and lies almost entirely in the right (instead of the left) side of the chest. The second is a condition in which the left chambers of the heart are on the right side and the right chambers are on the left side, so that the heart and great vessels present a mirror image of the normal heart.

DIASTOLE *(di-as'to-le)*
In each heartbeat, the period of the relaxation of the heart. Atrial diastole is the period of relaxation of the atria, or upper heart chambers. Ventricular diastole is the period of relaxation of the ventricles, or lower heart chambers. **See Cardiac Cycle.**

DIET *(di'et)*
Daily allowance or intake of food and drink.

DIETETICS *(di-e-tet'iks)*
The science and art dealing with the application of principles of nutrition to the feeding of individuals or groups under different economic or health conditions.

DIETITIAN *(di-e-tish'an)*
One skilled in the scientific use of diet in health and disease.

DIGITALIS *(dij"e-tal'is)*
A drug prepared from leaves of the foxglove plant. Its main effect is cardiotonic, that is, it causes the heart muscle to pump more forcefully and effectively, thereby improving the circulation of the blood and promoting the normal elimination of excess fluid. Digitalis is often used to treat heart failure because it can relieve one of the early effects of the condition—buildup of fluid in the body tissues.

Digitalis is the most frequently used cardiotonic drug; other examples are ouabain and strophanthidin.

DILATION *(di-la'shun)*
A stretching or enlargement of the heart or blood vessels beyond the norm.

DIURESIS *(di"u-re'sis)*
Increased excretion of urine.

DIURETIC *(di"u-ret'ik)*
A medicine which promotes the excretion of urine. These drugs are often used to treat conditions involving excess body fluid such as hypertension and congestive heart failure. One important class of diuretics is the thiazides.

DUCTUS ARTERIOSUS *(duk'tus ar-te"re-o'sis)*
A small duct in the heart of the fetus between the artery leaving the right side of the heart (pulmonary artery) and the artery leaving the left side of the heart (aorta). Normally this duct closes soon after birth. If it does not close, the condition is known as patent or open ductus arteriosus. **See Patent Ductus Arteriosus.**

DYSPNEA *(disp'ne-ah)*
The uncomfortable sensation or awareness of shortness of breath.

E

ECG
See Electrocardiogram

ECHOCARDIOGRAPHY *(ek"o-kar"de-og'rah-fe)*
A diagnostic method by which pulses of sound (ultrasound) are transmitted into the body and the echoes returning from the surfaces of the heart and other structures are electronically plotted and recorded. Stop-action or real-time images of the heart can be made into a record of the heart's movements.

ECHOGRAM *(ek'o-gram)*
An image of the heart and great vessels, as would be produced by echocardiography.

ECTOMORPH *(ek'to-morf)*
Wiry body type.

EDEMA *(e-de'mah)*
Swelling due to abnormally large amounts of fluid in the tissues of the body.

EFFORT SYNDROME *(sin'drom)*
A group of symptoms (quick fatigue, rapid heartbeat, sighing breaths, dizziness) that do not result from disease of organs or tissues and that are out of proportion to the amount of exertion required. Often called functional heart disease.

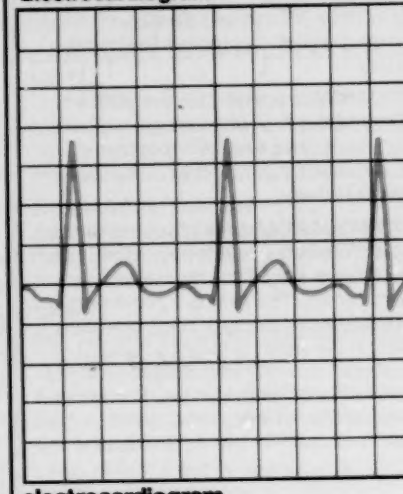
EISENMENGER'S SYNDROME *(i'sen-meng"erz)*
A condition in which there is a large congenital shunting defect complicated by high blood pressure in the vessels of the lungs (pulmonary hypertension). A shunting defect is an abnormal opening between heart chambers (septal defect) or between the great vessels (such as patent ductus arteriosus) such that some oxygen-poor blood gets pumped to the body and some oxygen-rich blood gets pumped to the lungs.

The syndrome is also called Eisenmenger's Reaction. The term **Eisenmenger's Complex** is used only when the defect is in the ventricular septum.

EKG
See Electrocardiogram.

ELECTROCARDIOGRAM *(e-lek"tro-kar'de-o-gram")*
Often referred to as ECG or EKG. A graphic record of the electric currents generated by the heart.

The word "electrocardiogram" most often refers to a resting electrocardiogram, that is, the patient lying at rest while the recording is bein made. The recording can also be made during exercise. **See Exercise Electrocardiogram.**



electrocardiogram

ELECTROLYTE *(e-lek'tro-lit)*
A substance which, when dissolved in a liquid, dissociates into ions (positively and negatively charged particles). A solution of electrolytes is capable of conducting an electrical current.

Electrolytes, especially sodium and potassium, occur naturally in the body fluids. Heart disease and medications to treat it can cause abnormal electrolyte concentrations in the body fluids. Physicians sometimes prescribe diet and medications to correct these disordered concentrations.

EMBOLISM *(em'bo-lizm)*
The blocking of a blood vessel by a clot or other substance carried in the bloodstream.

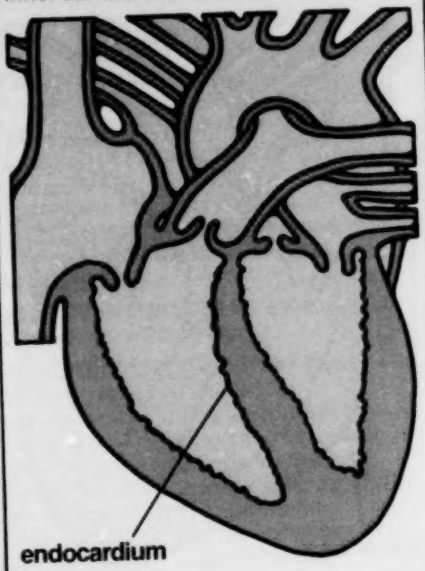
EMBOLUS *(em'bo-lus)*
A blood clot (or other substance such as an air bubble, fat or tumor) which drifts unattached in the bloodstream until it becomes lodged in a small vessel and obstructs circulation. **See Thrombus.**

ENDARTERECTOMY *(end"ar-ter-ek'to-me)*
Surgical removal of the innermost lining (intima) of an artery when it is thickened by fatty deposits (atheroma) and blood clots (thromboses).

ENDOCARDIAL FIBROELASTOSIS *(en"do-kar'de-al fi"bro-e"las-to'sis)*
A heart disease of unknown cause occurring in adults, but mostly in infants. It involves thickening of the lining of the heart chambers (endocardium) with elastic tissue. The thickening is most pronounced in the left ventricle and greatly impairs cardiac function.

ENDOCARDITIS *(en"do-kar-di'tis)*
Inflammation of the inner lining of the heart (endocardium) usually associated with acute rheumatic fever or some infectious agents.

ENDOCARDIUM *(en"do-kar'de-um)*
A thin smooth membrane forming the inner surface of the heart.



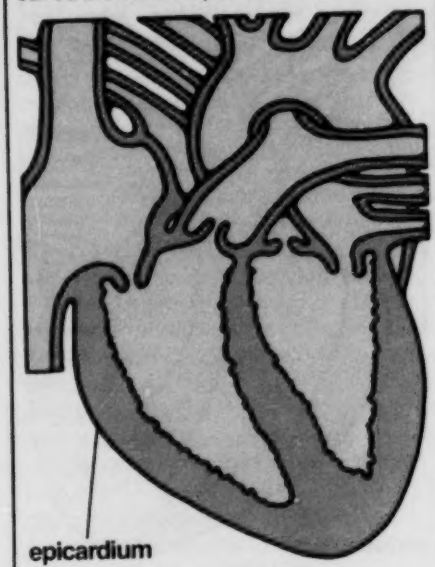
ENDOMORPH *(en'do-morf)*
Short and thickset body type.

ENDOTHELIUM *(en"do-the'le-um)*
The thin lining of the blood vessels.

ENLARGED HEART
A state in which the heart is larger than normal. This may be due to heredity, a large amount of exercise over a period of time, or conditions which cause the heart to work harder—such as high blood pressure, obesity and defects of the heart or great vessels.

ENZYME *(en'zim)*
A complex organic substance which is capable of speeding up specific biochemical processes in the body. Enzymes are universally present in living organisms.

EPICARDIUM *(ep"e-kar'de-um)*
The outer layer of the heart wall. Also called the visceral pericardium.



EPIDEMIOLOGY *(ep'e-de"me-ol'-o-je)*
The science dealing with the factors which determine the frequency and distribution of a disease in a human community.

EPINEPHRINE *(ep"e-nef'rin)*
One of the secretions of two small glands, called adrenal glands, located just above the kidneys. This secretion, also called adrenalin, and sometimes prepared synthetically, constricts the small blood vessels (arterioles), increases the heart rate, and raises blood pressure. It is a vasoconstrictor or vasopressor substance.

ERYTHROCYTE *(e-rith'ro-site)*
Red blood cell.

ESOPHOGEAL VARICES *(e-sof"ah-je'al var'i-seez)*
Varicosed or swollen veins in the wall of the esophagus, the tube connecting the mouth and the stomach. These are dangerous because they may rupture and bleed profusely. Esophageal varices are often associated with cirrhosis of the liver. **See Varix.**

ESSENTIAL HYPERTENSION *(e-sen'shal hi"per-ten'shun)*
Sometimes called primary hypertension, and commonly known as high blood pressure. An elevated blood pressure of unknown cause.

ETIOLOGY *(e"te-ol'o-je)*
The sum of knowledge about the causes of a disease.

EXERCISE ELECTROCARDIOGRAM *(e-lek"tro-kar'de-o-gram")*
Often referred to as a "stress test." An electrocardiogram taken while the patient is exercising—usually jogging on a treadmill, walking up and down a short set of stairs, or pedaling on a stationary bicycle. **See Electrocardiogram.**

EXTRACORPOREAL CIRCULATION *(eks"trah-kor-po're-al)*
The circulation of the blood outside the body as by a mechanical pump or pump-oxygenator. This is often done while surgery is being performed on the heart.

EXTRASYSTOLE *(eks"trah-sis'to-le)*
A contraction of the heart which occurs prematurely and interrupts the normal rhythm.

EYEGROUND *(i'ground)*
The inside of the back part of the eye seen by looking through the pupil. Examining the eyeground is one means of assessing changes in the blood vessels. Also called fundus of the eye.

F

FABRICIUS AB AQUAPENDENTE, HIERONYMUS (1560-1634)
Italian anatomist, a teacher of William Harvey at Padua. He studied the valves of the veins. Harvey is reported to have credited the work of Fabricius with leading to his own concept of the circulation of the blood.

FALLOT, ETIENNE LOUIS ARTHUR (1850-1911) *(fal-o')*
French physician who gave an important description of a congenital heart defect known as the Tetralogy of Fallot (more accurately, *Tetrad* of Fallot). **See Tetralogy of Fallot.**

FEMORAL ARTERY *(fem'or-al ar'ter-e)*
Main blood vessel supplying blood to the leg.

FIBRILLATION *(fi-bri-la'shun)*
A kind of cardiac arrhythmia. Uncoordinated contraction of the heart muscle occurring when the individual muscle fibers take up independent irregular contractions. **Atrial fibrillation** involves very rapid, irregular contractions of the atria, followed irregularly by contractions of the ventricles. This may occur suddenly and for a short time, or, if there is an existing heart disease, can become chronic. Treatment is usually by drugs and sometimes by cardioversion (brief electric shock). **Ventricular fibrillation** involves contractions of the ventricles which are irregular, haphazard and ineffective, resulting in a rapid decline of blood circulation and death. Emergency treatment may include external cardiac massage (cardiopulmonary resuscitation—CPR), electrical defibrillation (cardioversion) or drugs. **See Cardiopulmonary Resuscitation and Cardioversion.**

FIBRIN *(fi'brin)*
An elastic, threadlike protein which forms the essential portion of a blood clot.

FIBRINOGEN *(fi-brin'o-jen)*
A protein dissolved in the blood which, by the action of certain enzymes, is converted into the insoluble threadlike protein of a blood clot (fibrin).

FIBRINOLYSIN *(fi"bri-no-li'sin)*
An enzyme which can cause coagulated blood to return to a liquid state.

FIBRINOLYTIC AGENTS *(fi"bri-no-lit'ik)*
Also called thrombolytic agents. Substances which dissolve blood clots. Two examples are streptokinase and urokinase.

FLOPPY MITRAL VALVE SYNDROME
See Barlow's Syndrome.

FLUORESCENT ANTIBODY TEST *(floo"o-res'ent an'te-bod"e)*
A rapid and sensitive laboratory test. Among other things, it can be used to detect the disease-causing bacteria known as streptococci, especially those that cause rheumatic fever and therefore rheumatic heart disease. The test consists of "tagging" with a fluorescent dye the antibodies, i.e., substances in blood serum that have been built up to defend the body against bacteria. This dyed antibody is then mixed with a smear taken from the throat of the patient. If there are streptococci present in the smear, the glowing antibodies will attach to them, and they can be clearly seen through a microscope. **See Rheumatic Fever and Rheumatic Heart Disease.**

FLUOROSCOPE *(floo'o-ro-skop)*
An instrument for observing the internal body organs at work. X-rays are passed through the body onto a fluorescent screen where the shadows of the beating heart and other organs can be seen and studied.

FLUOROSCOPY *(floo"or-os'ko-pe)*
The examination of structures within the body by means of a fluoroscope.

FLUTTER
See Atrial Flutter.

FORAMEN OVALE *(fo-ra'men o-va"le)*
An oval hole between the left and right upper chambers of the heart which normally closes shortly after birth. Its failure to close is one of the congenital defects of the heart, called a patent (open) foramen ovale.

FUNDUS OF THE EYE *(fun'dus)*
The inside of the back part of the eye seen by looking through the pupil. Examining the fundus of the eye is used as a means of assessing changes in the blood vessels. Also called the eyeground.

G

GALEN (CLAUDIUS GALENUS) (c. 130-200 A.D.)
Renowned Greek physician whose theory that life and health depended upon the balance of four "humors" in the body dominated medical practice for 1500 years. His concept of the ebb and flow of the blood (which transported the humors to various parts of the body) was not refuted until William Harvey's discovery of the circulation of the blood in 1628.

GALLOP RHYTHM
An extra heart sound which, when the heart rate is rapid enough, resembles a horse's gallop. It may or may not be significant.

GANGLION *(gang'gle-on)*
A mass of nerve cells which serves as a center of nervous influence.

GANGLIONIC BLOCKING AGENTS *(gang"gle-on'ik)*
Drugs which block the transmission of a nerve impulse at the nerve centers (ganglia) rather than at the nerve endings (as would adrenergic blocking agents). Some of these drugs, such as hexamethonium and mecamylamine hydrochloride, may be used in the treatment of high blood pressure.

GENETICS *(je-net'iks)*
The study of heredity.

GUANETHIDINE *(gwa-ne'thi-deen)*
One of the drugs used to control high blood pressure. **See Antihypertensive Drugs.**

H

HARVEY, WILLIAM (1578-1657)
English physician who discovered the circulation of the blood and described his theory in 1628 in his classic work *De Motu Cordis*.

HEART ATTACK
The death of a portion of heart muscle which may result in disability or death of the individual, depending on how much of the heart is damaged. A heart attack occurs when an obstruction in one of the coronary arteries prevents an adequate oxygen supply to the heart. Symptoms may be none, mild or severe and may include chest pain (sometimes radiating to the shoulder, arm, neck or jaw), nausea, cold sweat, and shortness of breath.

Doctors often refer to a heart attack in terms of the obstruction (i.e., coronary occlusion, coronary thrombosis, or simply "coronary") or of the heart muscle damage (myocardial infarction, "infarct," or "M.I."). In common usage, the term "heart attack" often incorrectly refers to irregular heartbeats or attacks of angina pectoris.

HEART BLOCK
A condition in which the electrical impulse which travels through the heart's specialized conduction system to trigger the events of the heartbeat is slowed or blocked along its pathway. This can result in a dissociation of the rhythms of the upper and lower heart chambers, and is the major disorder for which artificial pacemakers are used. **See Sinoatrial Node and Pacemaker.**

HEART DISEASE
A general term used to mean ailments of the heart or blood vessels. Some of these are present at birth (congenital) and are either inherited or are the result of environmental influences on the embryo as it develops in the womb. The majority of cases of heart disease, however, are acquired later in life, for example, through the development of atherosclerosis.

HEART FAILURE
A condition in which the heart is unable to pump the amount of blood required to maintain a normal circulation. It can be isolated to either the left or the right side of the heart, or can involve the whole heart. Heart failure can develop from many heart and circulatory disorders, especially high blood pressure (an increased resistance to bloodflow in the arteries), heart attack, rheumatic heart disease and birth defects.

Heart failure often leads to congestion in the body tissues; fluid accumulates in the abdomen and legs and/or in the lungs (pulmonary edema). Congestive heart failure often develops gradually over several years, although it can be acute (short and severe). It can be treated by drugs or in some cases by surgery.

HEART-LUNG MACHINE
A machine through which the bloodstream is diverted for pumping and oxygenation, for example, during heart surgery. **See Extracorporeal Circulation.**

HEART MASSAGE
Also called cardiac massage. An emergency technique using compression of the heart to keep the blood pumping through the body in the event the heart stops pumping effectively. **External heart massage** involves pressing on the chest to compress the heart between the breastbone and the spine. Also, raising the pressure inside the chest by external compression may aid the heart's emptying as well. **Internal cardiac massage** is usually done in the operating room where the heart is directly compressed by the surgeon's hand through an incision in the chest.

HEMIPLEGIA *(hem"e-ple'je-ah)*
Paralysis of one side of the body caused by damage to the opposite side of the brain. Nerves cross in the brain, and one side of the brain controls the opposite side of the body. Such paralysis is sometimes caused by a blood clot or hemorrhage in a blood vessel in the brain. **See Stroke.**

HEMODYNAMICS *(he"mo-di-nam'iks)*
The study of the flow of blood and the forces involved.

HEMOGLOBIN *(he"mo-glo'bin)*
The oxygen-carrying red pigment of the red blood cells (corpuscles). When it has absorbed oxygen in the lungs, it is bright red and is called oxyhemoglobin. After it has given up some of its oxygen load in the tissues, it is dark burgundy in color and is called reduced hemoglobin.

HEMORRHAGE *(hem'or-ij)*
Loss of blood from a blood vessel. In external hemorrhage blood escapes from the body. In internal hemorrhage blood passes into tissues surrounding the ruptured blood vessel.

HEMORRHOIDS *(hem'o-roidz)*
Varices or excessively distended veins in the lower rectum and anus caused by a persistent increase in pressure within or against these veins. They are painful and often complicated by inflammation, bleeding, and clotting blood. **See Varix.**

HEPARIN *(hep'ah-rin)*
A naturally occurring substance which tends to prevent blood from clotting. Sometimes used in cases of an existing clot in an artery or vein to prevent enlargement of the clot or the formation of new clots. An anticoagulant.

HIGH BLOOD PRESSURE
An unstable or persistent elevation of blood pressure above the normal range. Uncontrolled, chronic high blood pressure strains the heart, damages arteries, and creates a greater risk of heart attack, stroke, and kidney problems. Also known as hypertension. **See Primary Hypertension and Secondary Hypertension.**

HIS, WILHELM (1831-1904) *(hiss)*
German anatomist who discovered the bundle of specialized muscle fibers running from the upper to lower chambers of the heart. These fibers are known as the "Bundle of His."

HYDRALAZINE *(hi-dral'ah-zeen)*
One of the drugs used to control high blood pressure. **See Antihypertensive Drugs.**

HYDROGENATED *(hi'dro-jen-a"tid)*
Combined with more hydrogen; more saturated.

HYPERCHOLESTEREMIA *(hi"per-ko-les"ter-e'me-ah)*
An excess of a fatty substance called cholesterol in the blood. Sometimes called hypercholesterolemia or hypercholesterinemia. **See Cholesterol.**

HYPERLIPEMIA *(hi"per-li-pe'me-ah)*
An excess of fats or lipids in the blood. Also called hyperlipidemia.

HYPERLIPOPROTEINEMIA *(hi"per-lip"o-pro"te-in-e'me-ah)*
The name for several types of blood-lipid disorders involving high blood levels of lipoproteins (complexes of lipids—either cholesterol or triglycerides—and certain kinds of proteins). Some types of hyperlipoproteinemia (Type II and Type IV) are associated with the premature development of atherosclerosis (hardening of the arteries) and therefore with increased risk of heart attack and stroke.

HYPERTENSION *(hi"per-ten'shun)*
Commonly called high blood pressure. **See High Blood Pressure, Primary Hypertension, and Secondary Hypertension.**

HYPERTENSIVE *(hi"per-ten'siv)*
A person with high blood pressure (hypertension).

HYPERTHYROIDISM *(hi"per-thi'roid-izm)*
A condition in which the thyroid gland is overly active. This may eventually result in a speeded up rate of heartbeat.

HYPERTROPHY *(hi-per'tro-fe)*
The enlargement of a tissue or organ due to increase in the size of its constituent cells. This may result from a demand for increased work.

HYPOCHOLESTEREMIC DRUGS *(hi"po-ko-les"te-re'mik)*
See Lipid-Lowering Drugs.

HYPOLIPEMIC DRUGS *(hi"po-li-pe'mik)*
Also called hypolipidemic drugs. **See Lipid-Lowering Drugs.**

HYPOTENSION *(hi"po-ten'shun)*
Commonly called low blood pressure. Blood pressure below the normal range. Most commonly used to describe an acute fall in blood pressure, as occurs in shock or syncope (fainting).

HYPOTHALAMUS *(hi"po-thal'ah-mus)*
A part of the brain which exerts control over activity of the abdominal organs, water balance, temperature, etc. Damage to the hypothalamus may cause abnormal gain in weight, among other things.

HYPOTHERMIA *(hy"po-ther'me-ah)*
Also called hypothermy. The state of low body temperature. Often induced (usually to 86-88 degrees F) during heart surgery in order to slow the metabolic processes. In this cooled state body tissues require less oxygen, and are therefore less likely to be damaged by oxygen deprivation.

HYPOTHYROIDISM *(hi"po-thi'roid-izm)*
A condition in which the thyroid gland is underactive, resulting in the slowing down of many of the body processes including the heart rate.

HYPOXIA *(hi-pok'se-ah)*
Less than normal content of oxygen in the organs and tissues of the body. At very high altitudes a healthy person experiences hypoxia because of insufficient oxygen in the air.

IATROGENIC HEART DISEASE *(i"at-ro-jen'ik)*
Literally means "caused by the doctor." A heart ailment inadvertently caused by the doctor or simply by the patient's belief that he has heart disease inferred from the manner and actions of his physician or other member of the medical team.

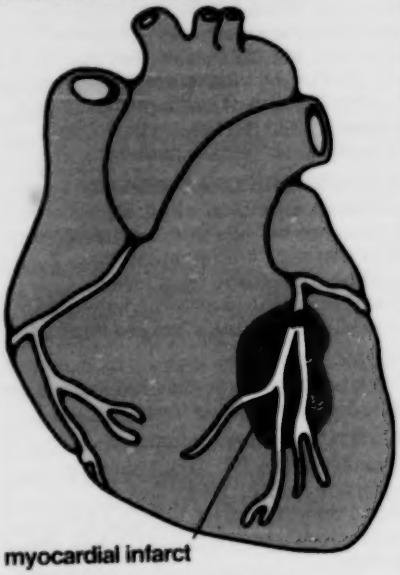
IDIOPATHIC HYPERTROPHIC SUBAORTIC STENOSIS (IHSS) *(id"e-o-path'ik hi"per-tro'fik sub"a-or'tik ste-no'sis)*
See Asymmetric Septal Hypertrophy.

ILIAC ARTERY *(il'e-ak ar'ter-e)*
A large artery which conducts blood to the pelvis and the legs.

INCIDENCE *(in'si-dens)*
The number of new cases of a disease developing in a given population during a specified period of time, such as a year.

INCOMPETENT VALVE *(in-kom'pe-tent)*
Any valve which does not close tight and leaks blood back in the wrong direction. Also called valvular insufficiency.

INFARCT *(in'farkt)*
The area of tissue which is damaged or dies as a result of receiving an insufficient blood supply. Frequently used in the phrase "myocardial infarct," referring to the area of heart muscle injury due to the interrupted flow of blood through the coronary artery which normally supplies it.



myocardial infarct

INFARCTION *(in-fark'shun)*
The occurrence of an infarct.

INNOMINATE ARTERY *(in-nom'i-nat)*
One of the largest branches of the aorta. It arises from the arch of the aorta and divides to form the right common carotid artery and the right subclavian artery.

INTERATRIAL SEPTUM *(in"ter-a'tre-al sep'tum)*
Sometimes called atrial septum. Muscular wall dividing left and right upper chambers (the atria) of the heart.
For illustration see Septum.

INTERMITTENT CLAUDICATION *(in"ter-mit'ent klaw"di-ka'shun)*
Pain in the muscles of a limb which, similar to angina pectoris, occurs intermittently—during stress but not at rest. This condition frequently accompanies diseases of the peripheral blood vessels, such as thromboangiitis obliterans. The resting muscle has an adequate blood supply, but when the need for blood increases (as during exercise), the disease impairs the circulation. An inadequate blood supply and the buildup of waste products of metabolism in the tissues cause pain. "Claudication" means lameness.

INTERVENTRICULAR SEPTUM *(in"ter-ven-trik'u-lar sep'tum)*
Sometimes called ventricular septum. Muscular wall, thinner at the top, dividing the left and right lower chambers of the heart which are called ventricles. **For illustration see Septum.**

INTIMA *(in'ti-mah)*
The innermost layer of a blood vessel (it includes the endothelium).

IN VITRO *(in vee'tro)*
Literally means "in glass," hence in a laboratory vessel. Describes a phenomenon studied outside a living body under laboratory conditions. **See In Vivo.**

IN VIVO *(in vee'vo)*
In a living organism. Describes a phenomenon studied in a living body. **See In Vitro.**

ISCHEMIA *(is-ke'me-ah)*
A local, usually temporary, deficiency of oxygen in some part of the body, often caused by a constriction or an obstruction in the blood vessel supplying that part.

ISCHEMIC HEART DISEASE *(is-kem'ik)*
Also called coronary artery disease and coronary heart disease. Heart ailments caused by narrowing of the coronary arteries and therefore a decreased blood supply to the heart (ischemia).

ISOPROTERENOL *(i"so-pro"te-re'nol)*
A drug which can be used as a cardiac stimulant to treat an abnormally slow heartbeat.

ISOTOPE *(i'so-top)*
Any of two or more species of a chemical element. The isotopes of one element are chemically identical, but differ by some physical property such as mass or radioactivity. Radioactive isotopes (radioisotopes) are often used in medicine to trace the fate of substances in the body. **See Radioisotopic Scanning.**

J

JUGULAR VEINS *(jug'u-lar)*
Veins which return blood from the head and neck to the heart.

L

LAENNEC, RENE THEOPHILE HYACINTHE (1781-1826)
French physician who invented the stethoscope.

LEEUWENHOEK, ANTONY VAN (1632-1723)
Dutch microscopist who, among other scientific contributions, discovered the interwoven structure of the muscle fibers of the heart.

LEUKOCYTES *(lu'ko-sitz)*
See White Blood Cells.

LIFESTYLE
An individual's typical way of life, including diet, kinds of recreation, job, home environment, location, temperament, and smoking, drinking and sleeping habits.

LINOLEIC ACID *(lin-o-lay'ik)*
An important component of many of the unsaturated fats. It is found widely in oils from plants. A diet with a high linoleic acid content tends to lower the amount of cholesterol in the blood.

LIPID *(lip'id)*
A fatty substance.

LIPID-LOWERING DRUGS
Drugs used to treat the various types of hyperlipoproteinemia, that is, abnormally high concentrations of lipids (fats) in the blood. Also called hypolipemic and hypolipidemic drugs; those drugs that lower blood levels of the lipid cholesterol are called hypocholesteremic.

The most common lipid-lowering drugs used are cholestyramine, clofibrate and nicotinic acid.

LIPOPROTEIN *(lip"o-pro'te-in)*
A complex consisting of lipid (fat) and protein molecules bound together. Lipids do not dissolve in the blood, but must circulate in the form of lipoproteins.

LUMEN *(lu'men)*
The passageway inside a tubular organ. The vascular lumen is the passageway inside a blood vessel.

M

MALIGNANT HYPERTENSION *(mah-lig'nant hi"per-ten'shun)*
Severe high blood pressure that may run a rapid course and cause damage to the blood vessel walls in the kidney, eye, and other organs. Its cardinal feature is central nervous system impairment, for example, coma, seizures, etc.

MALPIGHI, MARCELLO (1628-1694)
Italian anatomist who, among other discoveries, demonstrated the existence of capillary connections between the arteries and veins in the lungs.

MESOMORPH *(mes'o-morf)*
Muscular body type.

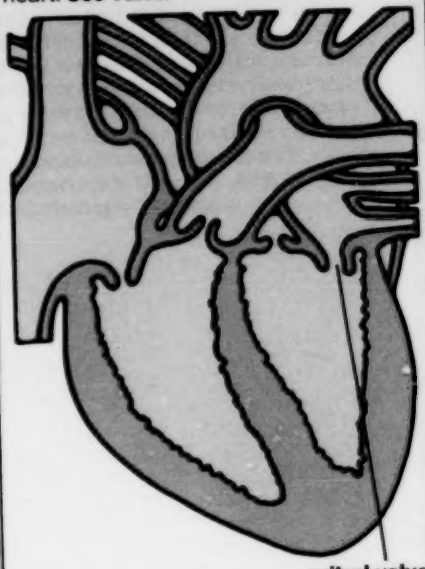
METABOLISM *(me-tab'o-lizm)*
A general term designating all chemical changes which occur to substances within the body.

METHYLDOPA *(meth"il-do'pah)*
One of the drugs used to control high blood pressure. **See Antihypertensive Drugs.**

MITRAL INSUFFICIENCY *(mi'tral in"su-fish'en-se)*
An incomplete closing of the mitral valve between the upper and lower chamber in the left side of the heart which permits a backflow of blood in the wrong direction. Sometimes the result of scar tissue forming after a rheumatic fever infection.

MITRAL STENOSIS *(mi'tral ste-no'sis)*
A narrowing of the valve (called the mitral valve) opening between the upper and lower chamber in the left side of the heart. Sometimes the result of scar tissue forming after a rheumatic fever infection.

MITRAL VALVE *(mi'tral)*
A valve of two cusps or triangular segments, located between the upper and lower chamber in the left side of the heart. **See Valve.**



MITRAL VALVULOTOMY *(mi'tral val"vu-lot'o-me)*
An operation to widen the opening of the mitral valve by means of surgery with a knife. Usually performed when the valve opening is so narrowed as to obstruct bloodflow, which sometimes happens as a result of rheumatic fever. **See Commissurotomy.**

MONO-UNSATURATED FAT *(mon"o-un-sat'u-rat-ed)*
A fat so constituted chemically that it is capable of absorbing additional hydrogen but not as much hydrogen as polyunsaturated fat. These fats in the diet have little effect on the amount of cholesterol in the blood. One example is olive oil. **See Polyunsaturated Fat.**

MORBIDITY RATE *(mor-bid'i-te)*
The ratio of the number of cases of a disease to the number of well people in a given population during a specified period of time, such as a year. The term "morbidity" involves two separate concepts:

a. **Incidence** is the number of new cases of a disease developing in a given population during a specific period of time, such as a year.
b. **Prevalence** is the number of cases of a given disease existing in a given population at a specified moment of time.

MORTALITY RATE, AGE-ADJUSTED *(mor-tal'i-te)*
Also called age-adjusted death rate. Death rates which have been standardized for age for the purpose of making comparisons between different populations or within the same population at various intervals of time. The age-specific death rates of the populations being compared are applied to a population that is arbitrarily selected as standard, to determine what would be the crude death rate in the standard population if it were exposed first to the rates of one population and then to the rates of the other.

MORTALITY RATE, AGE-SPECIFIC *(mor-tal'i-te)*
Also called age-specific death rate. The ratio of deaths in a specific age group to the population of the same age group during a given period of time, such as a year. It is calculated by dividing the deaths that occurred among the specific age group during the year by the mid-year population in the same group (estimated population in the age group on July 1) of the same year.

MORTALITY RATE, CAUSE-SPECIFIC *(mor-tal'i-te)*
The ratio of deaths from a specific cause to total population during a given period of time, such as a year.

MORTALITY RATE, CRUDE *(mor-tal'i-te)*
The ratio of total deaths to total population during a given period of time, such as a year. Sometimes called crude death rate. It is calculated by dividing the total number of deaths during the year by the mid-year population (estimated population on July 1) of the same year.

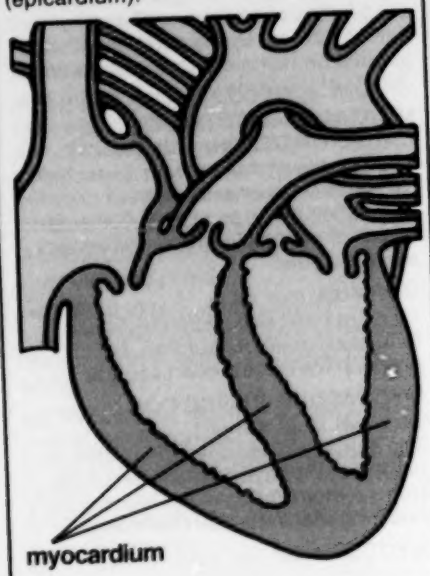
MORTALITY RATE (SPECIFIC-CAUSE-OF-DEATH) *(mor-tal'i-te)*
The number of deaths from a specific cause that occurred in a unit of population (such as per 100,000 or per 10,000 or per 1,000) in a specified time, such as a year.

MURMUR *(mur'mur)*
An extra heart sound, sounding like fluid passing an obstruction, heard between the normal heart sounds.

MYOCARDIAL INFARCTION *(mi"o-kar'de-al in-fark'shun)*
The damaging and death of an area of heart muscle (myocardium) resulting from an interruption in the blood supply reaching that area. **See Heart Attack.**

MYOCARDITIS *(mi"o-kar-di'tis)*
Inflammation of the heart muscle (myocardium). It may be due to a variety of diseases, certain chemicals or drugs, trauma (e.g. electric shock or excessive x-ray treatment), or may be of unknown origin.

MYOCARDIUM *(mi"o-kar'de-um)*
The muscular wall of the heart. The thickest of the three layers of the heart wall, it lies between the inner layer (endocardium) and the outer layer (epicardium).



N

NEUROCIRCULATORY ASTHENIA *(nu"ro-cir'cu-lah-to"re as-the'na-ah)*
Sometimes called soldier's heart, effort syndrome, or functional heart disease. A complex of nervous and circulatory symptoms, often involving a sense of fatigue, dizziness, shortness of breath, rapid heartbeat, and nervousness. **See Effort Syndrome.**

NEUROGENIC *(nu"ro-jen'ik)*
Originating in the nervous system.

NICOTINIC ACID *(nik'o-tin"ik)*
A lipid-lowering drug which can be used to lower elevated levels of both cholesterol and triglycerides in the blood. **See Lipid-Lowering Drugs.**

NITRITES *(ni'trits)*
A group of chemical compounds, many of which cause dilation of the small blood vessels and thus lower blood pressure. Examples are amyl nitrite, sodium nitrite, nitroprusside and nitroglycerin.

NITROGLYCERIN *(ni-tro-glis'er-in)*
A drug (one of the nitrites) which relaxes the muscles in the blood vessels. Often used to relieve attacks of angina pectoris and spasm of coronary arteries. It is one of the vasodilators.

NORADRENALIN *(nor"ad-ren'ah-lin)*
See Norepinephrine.

NOREPINEPHRINE *(nor"ep-e-nef'rin)*
An organic compound which produces a rise in blood pressure by constricting the small blood vessels. Sometimes used in the treatment of shock. Also called noradrenalin.

NORMOTENSIVE *(nor"mo-ten'siv)*
Characterized by normal blood pressure.

NUTRITIONIST *(nu-trish'un-ist)*
One professionally engaged in investigating and solving problems of nutrition.

O

OBESITY *(o-bees'i-te)*
An increase in body weight beyond physical and skeletal requirements due to an accumulation of excess fat. This puts a strain on the heart and increases the chance of developing two major heart attack risk factors—high blood pressure and diabetes.

OCCLUSIVE *(o-kloo'siv)*
Closing or shutting off. A coronary occlusion is a closing off of a coronary artery (which supplies the heart muscle with blood).

OPEN-HEART SURGERY
Surgery performed on the opened heart. This phrase is also often used to refer to all heart surgery—whether or not the heart itself is opened.

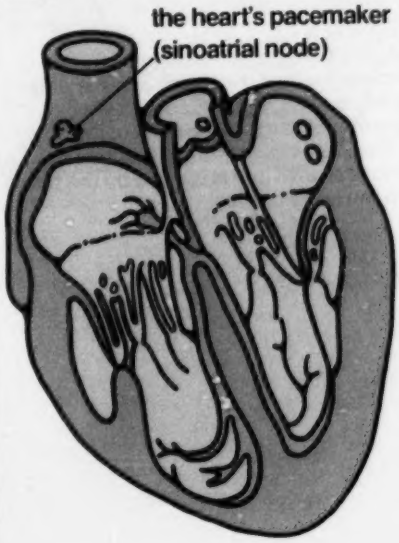
ORGANIC HEART DISEASE
Heart disease caused by some structural abnormality in the heart or circulatory system.

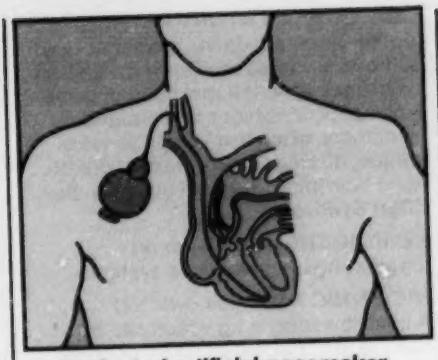
OXYGEN *(ok'si-jen)*
A gas which is the most important component of the air we breathe. It is vital to energy-producing chemical reactions in the living cells of the body. Breathed into the lungs, it enters the bloodstream and is carried by the blood to the body tissues.

P

PACEMAKER *(pas'mak-er)*
A small mass of specialized cells in the right atrium of the heart which gives rise to the electrical impulses that initiate contractions of the heart. Also called sinoatrial node or S-A node of Keith-Flack. Under abnormal circumstances, other cardiac tissues may assume the pacemaker role by initiating electrical impulses which stimulate contraction.

The term "artifical pacemaker" is applied to an electrical device which can substitute for a defective natural pacemaker and control the beating of the heart by a series of rhythmic electrical discharges. If the electrodes which deliver the discharges to the heart are placed on the outside of the chest, it is called an "external pacemaker." If they are placed within the chest wall, it is called an "internal pacemaker."

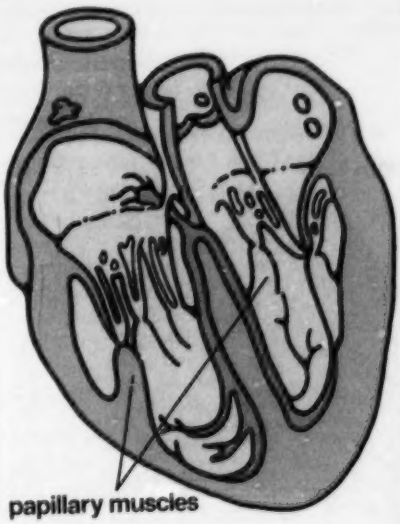




an implanted artificial pacemaker

PALPITATION *(pal"pi-ta'shun)*
A sensation of fluttering of the heart or abnormal rate or rhythm of the heart as experienced by the person.

PAPILLARY MUSCLES *(pap'i-ler"e)*
Small, cone-shaped muscles projecting from the walls of the lower heart chambers (the ventricles) to which are attached fibrous cords (chordae tendineae) stretching up to the flaps of the valves between upper and lower chambers. When the ventricles fill with blood and contract, the papillary muscles also contract and tighten the cords, allowing the valves to be pressed shut, but preventing them from being pushed back and open into the upper chambers (the atria) by the surging blood.

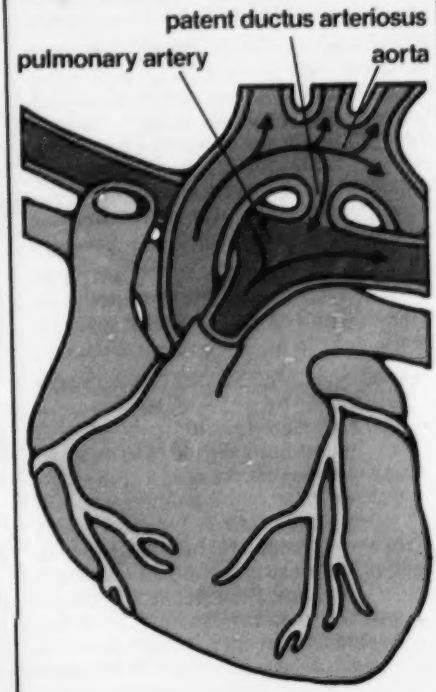


PARASYMPATHETIC NERVOUS SYSTEM *(par"ah-sim"pah-thet'ik)*
One of the two divisions of the autonomic nervous system. **See Autonomic Nervous System.**

PARIETAL PERICARDIUM *(pah-ri'e-tal per"e-kar'de-um)*
A thickened protective membrane which is the outer wall of the pericardium, the double-walled sac surrounding the heart. **For illustration see Pericardium.**

PAROXYSMAL TACHYCARDIA *(par"ok-siz'mal tak"e-kar'de-ah)*
A period of rapid heartbeats which begins and ends suddenly.

PATENT DUCTUS ARTERIOSUS *(pa'tent duk'tus ar-te"re-o'sis)*
A congenital heart defect in which a small duct between the artery leaving the left side of the heart (aorta) and the artery leaving the right side of the heart (pulmonary artery), which normally closes soon after birth, remains open. As a result of this duct's failure to close, blood from both sides of the heart is pumped into the pulmonary artery and into the lungs. This defect is sometimes called simply patent ductus. Patent means open.



PATENT FORAMEN OVALE *(pa'tent fo-ra'men o-va'le)*
One type of congenital heart defect. An oval hole (the foramen ovale) between the left and right upper chambers of the heart, which normally closes shortly after birth, remains open.

PERCUSSION *(per-kush'un)*
Tapping the body as an aid in diagnosing the conditions of parts beneath by the sound obtained. A physician will often tap the chest to determine the state of the heart and lungs—for instance, whether there may be a fluid accumulation or an enlarged heart.

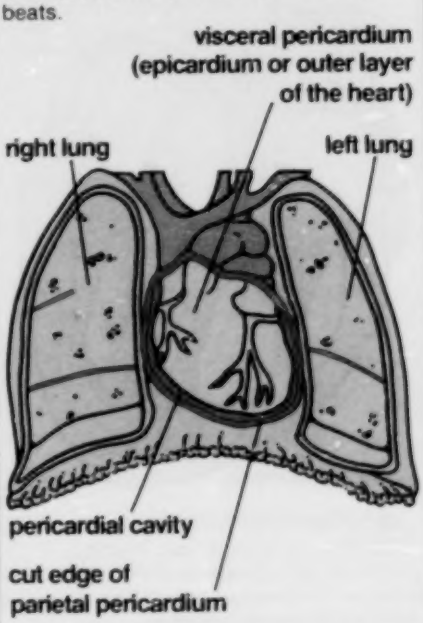
PERIARTERITIS NODOSA *(per"e-ar"te-ri'tis no-do'sa)*
See Polyarteritis Nodosa.

PERICARDIAL TAMPONADE *(per"i-kar'de-al tam"pon-ad')*
An accumulation of excess fluid between the two layers of the membrane sac surrounding the heart (the pericardium). This can happen rapidly or gradually and impairs the normal functioning of the heart. **See Pericardium.**

PERICARDITIS *(per"e-kar-di'tis)*
Inflammation of the membrane sac (pericardium) which surrounds the heart.

PERICARDIUM *(per"e-kar'de-um)*
A closed sac surrounding the heart and roots of the great vessels. The sac is formed by two walls:
The **visceral pericardium** is on the inside, closely adhering to the heart. It forms the outermost layer of the heart wall and is also called the epicardium.
The **parietal pericardium** is on the outer side of the sac and is anchored to other chest structures such as the breastbone. It is a protective membrane.

The space inside the sac (the **pericardial cavity**), between the two walls, contains a fluid which provides for smooth movements of the heart as it beats.



PERIPHERAL RESISTANCE *(pe-rif'er-al)*
The resistance offered by the arterioles to the flow of blood. An increase in peripheral resistance causes a rise in blood pressure.

PERIPHERAL VASCULAR DISEASE *(pe-rif'er-al vas'cu-lar)*
A term which, in its broadest sense, refers to diseases of any of the blood vessels outside of the heart and to diseases of the lymph vessels. These are circulation disorders caused by changes in the caliber of the vessels. **Functional** peripheral vascular diseases are not structural or organic in cause, but are transient and reversible. An example is Raynaud's disease, which can be triggered by cold temperatures, emotional stress, work with vibrating machinery or smoking. The term **organic** describes circulation disturbances which are caused by structural changes in the vessels (such as inflammation and tissue damage). An example is Buerger's disease (thromboangiitis obliterans).

PERSONALITY, TYPE A AND TYPE B
See Behavior, Type A and Type B.

PHEOCHROMOCYTOMA *(fe-o-kro"mo-si-to'mah)*
A tumor which arises in the adrenal glands. It produces and releases into the bloodstream large quantities of norepinephrine and epinephrine. These powerful natural stimulants may then create such symptoms as high blood pressure, elevated heart rate, headaches, anxiety, and excessive sweating.

PHLEBITIS *(fle-bi'tis)*
Inflammation of a vein, often in the leg. Sometimes a blood clot is formed in the inflamed leg. **See also Thrombophlebitis.**

PHOSPHOLIPIDS *(fos"fo-lip'idz)*
One of the three major classes of lipids (fatty substances) in the blood. Unlike the other two classes—cholesterol and triglycerides—phospholipids are *not* known to be associated with atherosclerosis (hardening of the arteries).

PLAQUE *(plak)*
See Atheroma.

PLASMA *(plaz'mah)*
The cell-free liquid portion of uncoagulated blood. It is different from serum which is the fluid portion of the blood obtained after coagulation.

PLATELETS *(plat'letz)*
One of the three kinds of formed elements found in the blood. Literally "little plates," they are small, colorless, disk-shaped bodies which are involved in the formation of blood clots. Also called thrombocytes. **See Red Blood Cells and White Blood Cells.**

PLETHYSMOGRAPHY *(pleth"iz-mog'rah-fe)*
The recording of changes in the size of an organ, part, or limb as blood circulates through it. However, lung volumes can also be measured with the technique.

POLYARTERITIS NODOSA *(pol"e-ar"te-ri'tis no-do'sa)*
A disease of unknown cause characterized by inflammation and destruction along segments of small and medium-sized arteries, creating lumps or nodes of scar tissue. This leads to functional impairment of the tissues supplied by the affected vessels.

POLYCYTHEMIA *(pol"e-si-the'me-ah)*
An abnormal condition of the blood characterized by an excessive number of red blood cells.

POLYUNSATURATED FAT *(pol"e-un-sat'u-rat-ed)*
A fat so constituted chemically that it is capable of absorbing additional hydrogen. These fats are usually liquid oils of vegetable origin, such as corn oil or safflower oil. A diet with a high polyunsaturated fat content tends to lower the amount of cholesterol in the blood. These fats are sometimes substituted for saturated fat in a diet in an effort to lessen the hazard of fatty deposits in the blood vessels. **See Mono-unsaturated Fat.**

PRESSOR *(pres'or)*
Tending to increase blood pressure, as a pressor substance.

PREVALENCE *(prev'ah-lens)*
The number of cases of a given disease existing in a given population at a specified moment of time.

PRIMARY HYPERTENSION *(hi"per-ten'shun)*
Also called essential hypertension. High blood pressure of unknown origin (as opposed to secondary hypertension, which is caused by some primary disease, such as kidney disease). Most people who have high blood pressure have primary hypertension. **See Secondary Hypertension.**

PROCAINE AMIDE *(pro'kane am'id)*
A drug sometimes used to treat abnormal rhythms of the heartbeat; an antiarrhythmic drug.

PROPRANOLOL *(pro-pran'o-lol)*
A member of the group of drugs known as beta-blocking agents. Propranolol is used to treat angina pectoris, cardiac arrhythmias, high blood pressure, and other disorders of the cardiovascular system. **See Adrenergic Blocking Agents.**

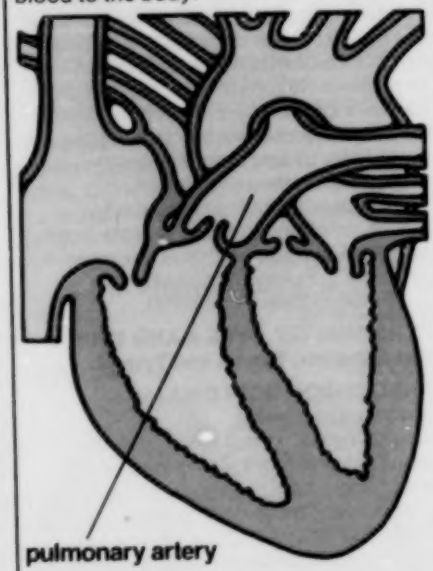
PROSTAGLANDINS *(pros"tah-glan'dinz)*
Hormone-like substances made from fatty acids which are found throughout the body tissues. They are thought to have important roles in tissue metabolism and bloodflow, among other things.

PROSTHESIS *(pros-the'sis)*
An artificial substitute for a body part, such as a leg, tooth, heart valve or blood vessel. The plural form is **Prostheses.**

PSYCHOSOMATIC *(si"ko-so-mat'ik)*
Pertaining to the influence of the mind, emotions, fears, etc., upon the functions of the body, especially in relation to disease.

PULMONARY *(pul'mo-ner"e)*
Pertaining to the lungs.

PULMONARY ARTERY
The large artery which conveys unoxygenated (venous) blood from the lower right chamber of the heart to the lungs. This is the only artery in the body which normally carries unoxygenated blood, all others carrying oxygenated blood to the body.



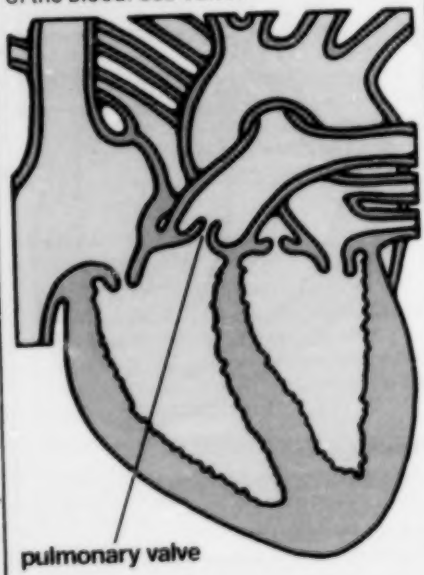
PULMONARY CIRCULATION
The circulation of the blood through the lungs, the flow being from the right lower chamber of the heart (right ventricle) through the lungs, back to the left upper chamber of the heart (left atrium). **See Systemic Circulation.**

PULMONARY EDEMA *(pul'mo-ner"e e-de'mah)*
A condition, usually acute (sudden and severe) but sometimes chronic, marked by an excess of fluid in the extravascular (outside the vessels) spaces in the lungs. It may be confined to the interstitial spaces or may appear in the alveoli (the millions of tiny air sacs in each lung). Pulmonary edema occurs most often as a complication of left ventricular failure due to ischemic heart disease, high blood pressure or disease of the aortic valve. **See Congestive Heart Failure and Heart Failure.**

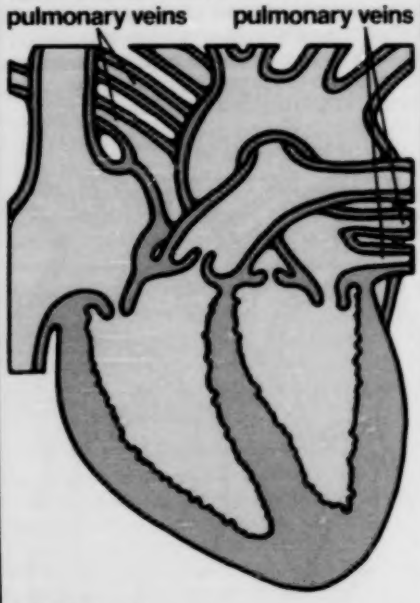
PULMONARY EMBOLISM *(em'bo-lizm)*
A condition in which a blood clot (embolus), usually one formed in a vein of the leg or pelvis, breaks loose and becomes lodged in one of the arteries of the lungs. This may produce no symptoms at all or may create very serious impairment of pulmonary circulation.

PULMONARY HYPERTENSION *(hi"per-ten'shun)*
High blood pressure (hypertension) in the blood vessels of the lungs. The two most common causes are chronic obstructive lung diseases (such as emphysema) and septal defects (holes in the wall which separates the left and right sides of the heart).

PULMONARY VALVE
Valve formed by three cup-shaped membranes at the junction of the pulmonary artery and the right lower chamber of the heart (right ventricle). When the right ventricle contracts, the pulmonary valve opens and the blood is forced into the artery leading to the lungs. When the chamber relaxes, the valve is closed and prevents a backflow of the blood. **See Valve.**



PULMONARY VEINS
The veins which conduct oxygenated blood from the lungs into the left upper chamber of the heart (left atrium).



PULSE *(puls)*
The expansion and contraction of an artery which may be felt with the finger.

PULSE PRESSURE
The difference between the blood pressure in the arteries when the heart is in contraction (systole) and when it is in relaxation (diastole).

PULSUS ALTERNANS *(pul'sus awl-ter'nanz)*
A pulse in which there is regular alternation of weak and strong beats.

PURKINJE FIBERS *(pur-kin'je)*
Specialized muscular fibers forming a network in the walls of the lower chambers of the heart and believed to be involved in conducting electrical impulses to the muscular walls of the two lower chambers (ventricles). These electrical impulses are responsible for the contractions of the heart.

Q

QUINIDINE *(kwin'i-deen)*
A drug sometimes used to treat abnormal rhythms of the heartbeat; an antiarrhythmic drug.

R

RADIOISOTOPE *(ray"de-o-i'so-top)*
A radioactive form ("isotope") of an element. **See Isotope.**

RADIOISOTOPIC SCANNING *(ray"de-o-i'so-top-ik skan'ning)*
A diagnostic technique involving radioactive labelling of tissues and organs by the injection of radioisotopes into the bloodstream. The emitted radioactivity is detected by a scanner and a record or "scan" of the labelled area is made. Used by cardiologists to visualize the heart and great vessels, it can often reveal areas of heart damage. **See Isotope and Radioisotope.**

RAUWOLFIA *(raw-wol'fe-ah)*
A drug consisting of powdered whole root of a plant (Rauwolfia serpentina) which lowers blood pressure and slows the heart rate. Sometimes used in treatment of high blood pressure. An antihypertensive agent. **See Reserpine.**

RAYNAUD'S DISEASE *(ray-noz')*
Also called Primary Raynaud's Phenomenon. A disorder characterized by occurrences of Raynaud's Phenomenon, but not known to have an underlying cause.

RAYNAUD'S PHENOMENON *(ray-noz')*
Short episodes of pallor and numbness in the fingers, toes and, rarely, the nose and ears, due to temporary constriction of the arterioles in the skin. Pallor in the affected area is followed by blueness (due to insufficient oxygen supply), then occasionally by redness as oxygenated blood rushes in. These episodes may be triggered by cold temperatures, emotional stress, working with vibrating machinery or cigarettes.

Primary Raynaud's Phenomenon is called **Raynaud's Disease**, is generally benign, and has no known cause. **Secondary Raynaud's Phenomenon** is a symptom of one of several serious disorders, which, if not detected and treated, may have serious consequences.

RED BLOOD CELLS (CORPUSCLES)
One of the three kinds of formed elements found in the blood. Their most important function is to carry oxygen by means of hemoglobin, the red pigment these cells contain. Also called erythrocytes. **See White Blood Cells and Platelets.**

REGURGITATION *(re-gur"ji-ta'shun)*
The backward flow of blood through a defective valve.

REHABILITATION *(re"hah-bil"i-ta'shun)*
The return of a person disabled by accident or disease to the maximum attainable physical, mental, emotional, social and economic usefulness, and, if employable, to an opportunity for gainful employment.

RENAL *(re'nal)*
Pertaining to the kidney.

RENAL CIRCULATION
The circulation of the blood through the kidneys. Important in heart disease because of its functon in the elimination of water, certain chemical elements, and waste products from the body.

RENAL HYPERTENSION *(re'nal hi"per-ten'shun)*
High blood pressure caused by damage to or disease of the kidneys or their blood vessels.

RESERPINE *(res'er-peen OR re-ser'peen)*
One of the organic substances found in the root of the Indian snake root plant (Rauwolfia serpentina) which lowers blood pressure, slows the heart rate, and has a sedative effect.

REVASCULARIZATION *(re-vas"ku-lar-i-za'shun)*
Restoration of sufficient bloodflow to body tissues when supplying arteries are narrowed or blocked by injury or disease. Such surgery can be done on the legs, kidneys, brain, neck or (most commonly) the heart.

One procedure for cardiac revascularization is endarterectomy, removal of the thickened inner lining of a narrowed coronary artery. Other procedures may involve the use of additional blood vessels, either artificial ones or ones from elsewhere in the body. Vessels from other parts of the body may either be rerouted from nearby structures (for example, the internal mammary artery) or by grafting whole sections of vessels onto the heart (as is done with the saphenous vein in coronary bypass surgery). **See Endarterectomy and Coronary Bypass Surgery.**

RHEUMATIC FEVER *(roo-mat'ik)*
A disease, usually occurring in childhood, which may follow a few weeks after a streptococcal infection. It is sometimes characterized by one or more of the following: fever, sore swollen joints, a skin rash, occasionally by involuntary twitching of the muscles (called chorea or St. Vitus Dance) and small nodes under the skin. In some cases the infection affects the heart and may result in scarring the valves, weakening the heart muscle, or damaging the sac enclosing the heart. **See Rheumatic Heart Disease.**

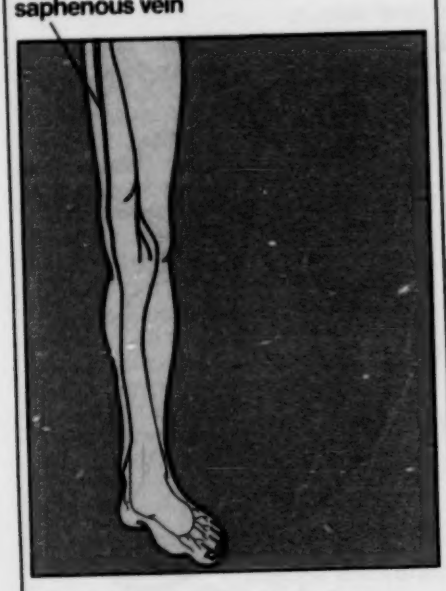
RHEUMATIC HEART DISEASE *(roo-mat'ik)*
The damage done to the heart, particularly the heart valves, by one or more attacks of rheumatic fever. The valves are sometimes scarred so they do not open and close normally. **See Rheumatic Fever.**

RISK FACTORS
In cardiology, characteristics which are associated with an increased risk of developing coronary heart disease. These include high blood pressure (hypertension), elevated blood levels of cholesterol and other lipids (hyperlipoproteinemia), cigarette smoking, obesity, diabetes and a family history of heart disease. A competitive, aggressive lifestyle (Type A Behavior) is also thought to predispose a person to heart disease.

S

S-A NODE
See Sinoatrial Node.

SAPHENOUS VEIN *(sah-fe'nus)*
A large vein in the leg which can be removed and grafted onto the heart in coronary bypass surgery to provide adequate coronary circulation. **See Coronary Bypass Surgery.**



SATURATED FAT *(sat'u-rat"ed)*
A fat so constituted chemically that it is not capable of absorbing any more hydrogen. These are usually the solid fats of animal origin such as the fats in milk, butter, meat, etc. A diet high in saturated fat content tends to increase the amount of cholesterol in the blood. Sometimes these fats are restricted in the diet in an effort to lessen the hazard of fatty deposits in the blood vessels.

SCLEROSIS *(skle-ro'sis)*
Hardening, as in the term "arteriosclerosis," hardening of the arteries.

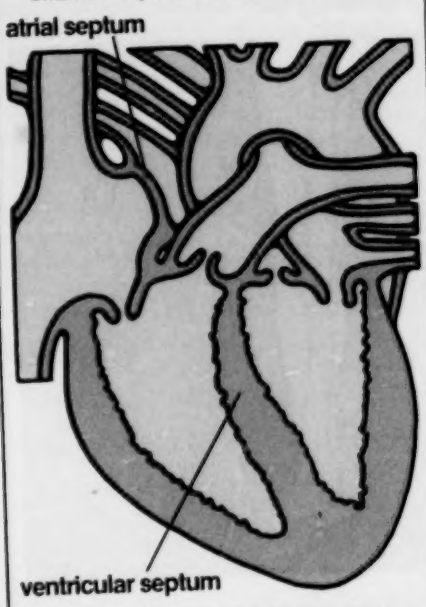
SECONDARY HYPERTENSION *(hi"per-ten'shun)*
High blood pressure caused by (i.e. secondary to) certain specific diseases or infections. **See Pheochromocytoma and Renal Hypertension.**

SEMILUNAR VALVES *(sem"e-lu'nar)*
Cup-shaped valves. The aortic valve at the entrance to the aorta and the pulmonary valve at the entrance to the pulmonary artery are semilunar valves. They consist of three cup-shaped flaps which prevent the backflow of blood.

SEPTAL DEFECT *(sep'tal)*
An abnormal opening in the wall (septum) that normally divides the right and left sides of the heart. There are both atrial and ventricular septal defects, depending on whether the upper or lower heart chambers are involved.

SEPTUM *(sep'tum)*
A dividing wall.

1. Atrial or interatrial septum. Muscular wall dividing left and right upper chambers (atria) of the heart.
2. Ventricular or interventricular septum. Muscular wall, thinner at the top, dividing the left and right lower chambers (ventricles) of the heart.



SEROTONIN *(ser"o-to'nin)*
A naturally occurring compound, found mainly in the gastrointestinal tract and in lesser amounts in the blood, which has a stimulating effect on the circulatory system.

SERUM *(se'rum)*
The fluid portion of blood which remains after the cellular elements have been removed by coagulation. It is different from plasma which is the cell-free liquid portion of uncoagulated blood.

SERVETUS, MICHAEL (1509-1553)
Spanish physician who discovered the circulation of the blood through the lungs. Burned at the stake in Geneva for his religious doctrines.

SHOCK
The collection of symptoms resulting from an inadequate volume of fluid circulating through the body to maintain normal metabolism. This may be due to a large loss of blood or to some derangement of circulatory control. Shock is marked by hypotension (low blood pressure), pale, cold skin, usually tachycardia (weak, rapid pulse), and often anxiety. Cardiogenic shock is shock resulting from a greatly diminished cardiac output, such as may occur in a large heart attack.

SHUNT
A passage between two blood vessels or between the two sides of the heart, as in cases where an opening exists in the wall which normally separates them. In surgery, the operation of forming a passage between blood vessels to divert blood from one part of the body to another.

SIGN
Any objective evidence of a disease. **See Symptom.**

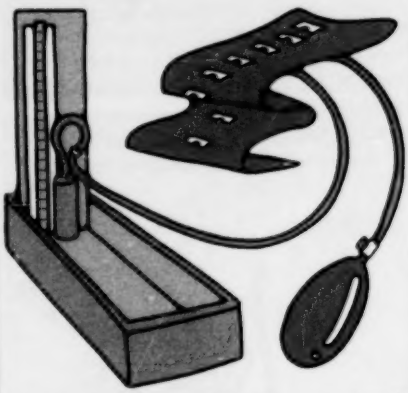
SINOATRIAL NODE *(si"no-a'tre-al)*
A small mass of specialized cells in the right upper chamber of the heart which give rise to the electrical impulses that initiate contractions of the heart. Also called S-A node or pacemaker. **For illustration see Pacemaker.**

SINUS RHYTHM *(si'nus rith'm)*
Normal heart rhythm as initiated by electrical impulses in the sinoatrial node or pacemaker. **See Pacemaker.**

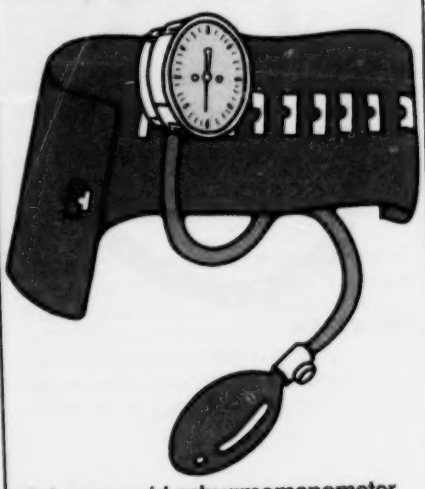
SINUSES OF VALSALVA *(si'nus-sez of val-sal'vah)*
Three pouches in the wall of the aorta behind the three cup-shaped membranes of the aortic valve.

SODIUM *(so'de-um)*
A mineral essential to life, found in nearly all plant and animal tissue. Table salt (sodium chloride) is nearly half sodium. In some types of heart disease the body retains an excess of sodium and water, and therefore sodium intake is restricted.

SPHYGMOMANOMETER *(sfig"mo-mah-nom'e-ter)*
An instrument for measuring blood pressure in the arteries.



mercury column sphygmomanometer



dial or aneroid sphygmomanometer

STARLING'S LAW OF THE HEART
A law which states that the more the heart muscle is stretched when an increased amount of blood fills the ventricles, the more vigorous its contraction will be, resulting in a greater amount of blood pumped out of the heart.

STASIS *(sta'sis)*
A stoppage or lessening of the flow of blood or other body fluid in any part.

STENOSIS *(ste-no'sis)*
A narrowing or stricture of an opening. Mitral stenosis, aortic stenosis, etc., mean that the valve indicated has become so narrowed that it does not function normally.

STETHOSCOPE *(steth'o-skop)*
An instrument for listening to sounds within the body.

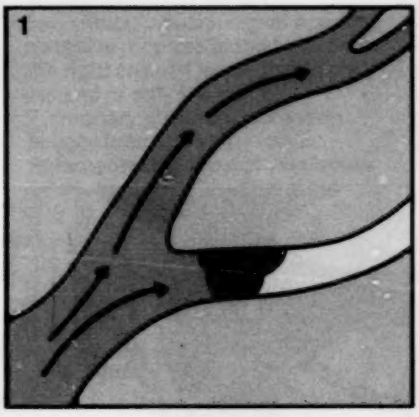
stethoscope

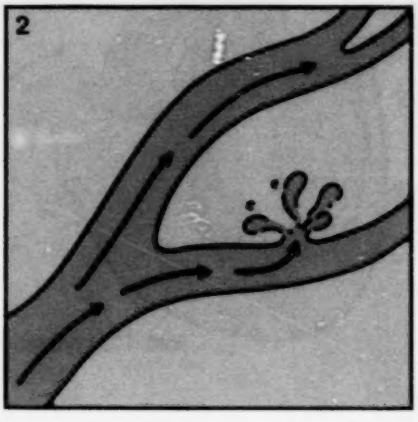
STRESS
Bodily or mental tension caused by physical, chemical or emotional factors. Stress can refer to physical exertion as well as mental anxiety.

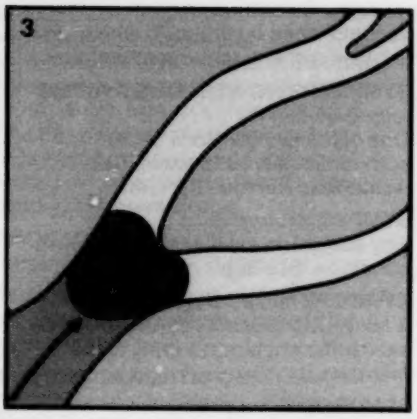
STRESS TEST
A diagnostic method used to determine the body's response to physical exertion (stress). Usually involves taking an ECG and other physiological measurements (such as breathing rate and blood pressure) while the patient is exercising—usually jogging on a treadmill, walking up and down a short set of stairs, or pedaling on a stationary bicycle.

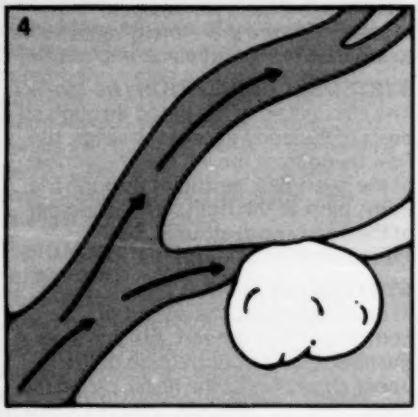
STROKE *(strok)*
Also called cerebral vascular accident. An impeded blood supply to some part of the brain, generally caused by:

1. A blood clot forming in the vessel (cerebral thrombosis).
2. A rupture of the blood vessel wall (cerebral hemorrhage).
3. A blood clot or other material from another part of the vascular system which flows to the brain and obstructs a cerebral vessel (cerebral embolism).
4. Pressure on a blood vessel, as by a tumor.









STROKE VOLUME *(strok)*
The amount of blood which is pumped out of the heart at each contraction of the heart.

SYMPATHECTOMY *(sim"pah-thek'to-me)*
An operation which interrupts some part of the sympathetic nervous system. The sympathetic nervous system is a part of the autonomic or involuntary nervous system which normally regulates tissues not under voluntary control, e.g., glands, heart, and smooth

muscles. Sometimes the interruption is accomplished by drugs, in which case it is called a chemical sympathectomy.

SYMPATHETIC NERVOUS SYSTEM *(sim"pah-thet'ik)*
One of the two divisions of the autonomic nervous system. **See Autonomic Nervous System.**

SYMPTOM *(simp'tum)*
Any subjective evidence of a patient's condition. **See Sign.**

SYNCOPE *(sin'ko-pe)*
A faint. One cause for syncope can be an insufficient blood supply to the brain.

SYNDROME *(sin'drom)*
A set of symptoms which occur together and are therefore given a name to indicate that particular combination.

SYSTEMIC CIRCULATION *(sis-tem'ik)*
The circulation of the blood through all parts of the body except the lungs, the flow being from the left lower chamber of the heart (left ventricle) through the body, back to the right upper chamber of the heart (right atrium). **See Pulmonary Circulation.**

SYSTOLE *(sis'to-le)*
In each heartbeat, the period of contraction of the heart. Atrial systole is the period of the contraction of the upper chambers of the heart, called the atria.

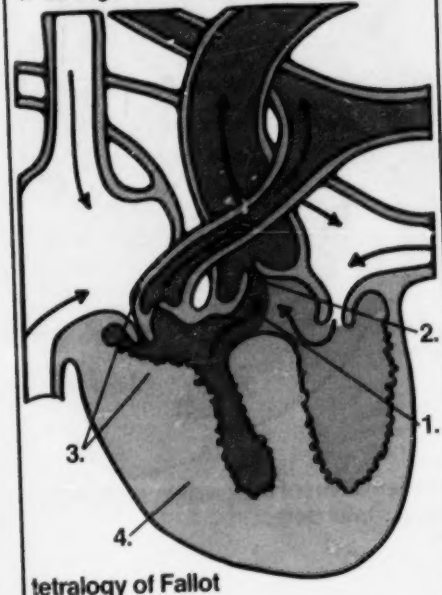
Ventricular systole is the period of the contraction of the lower chambers of the heart, called the ventricles. **See Cardiac Cycle.**

T

TACHYCARDIA *(tak"e-kar'de-ah)*
Abnormally fast heart rate. Generally, anything over 100 beats per minute is considered a tachycardia.

TETRALOGY OF FALLOT *(te-tral'o-je of fal-o')*
A congenital malformation of the heart involving four distinct defects (hence tetralogy). Named for Etienne Fallot, French physician who described the condition in 1888. The four defects are:

1. An abnormal opening in the wall between the lower chambers of the heart (ventricular septal defect).
2. Misplacement of the aorta, "overriding" the abnormal opening, so that is receives blood from both the right and left lower chambers instead of only the left.
3. Pulmonary outflow obstruction usually below or at the valve.
4. Enlargement of the right ventricle.



tetralogy of Fallot

THIAZIDES *(thi'a-sidz)*
Also called thiazide diuretics or benzothiadiazides. A class of diuretics (drugs which promote excretion of urine) which includes chlorothiazide. The thiazides are often used to treat high blood pressure and for the relief of edema, or waterlogged tissues. **See Antihypertensive Drugs.**

THORACIC *(tho-ras'ik)*
Pertaining to the chest (thorax).

THROMBECTOMY *(throm-bek'to-me)*
An operation to remove a blood clot from a blood vessel.

THROMBOANGIITIS OBLITERANS *(throm"bo-an"je-i'tis ob-lit'er-anz)*
Also called Buerger's disease. A disease of the blood vessels of the extremities, primarily the legs, which occurs most commonly in men and is associated with tobacco use. It is characterized by inflammation of the veins, arteries and nerves and by thrombosis in the vessels (blood clot formation). This leads to poor circulation and gangrene. **See Buerger's Syndrome.**

THROMBOEMBOLISM *(throm"bo-em'bo-lizm)*
Obstruction (embolism) of a blood vessel by a blood clot (thrombus) formed elsewhere in the circulatory system and carried along by the bloodstream to plug a smaller vessel.

THROMBOLYTIC AGENTS *(throm"bo-lit'ik)*
Substances which dissolve blood clots. Also called fibrinolytic agents. Two examples are streptokinase and urokinase.

THROMBOPHLEBITIS *(throm"bo-fle-bi'tis)*
Inflammation and blood clotting in a vein.

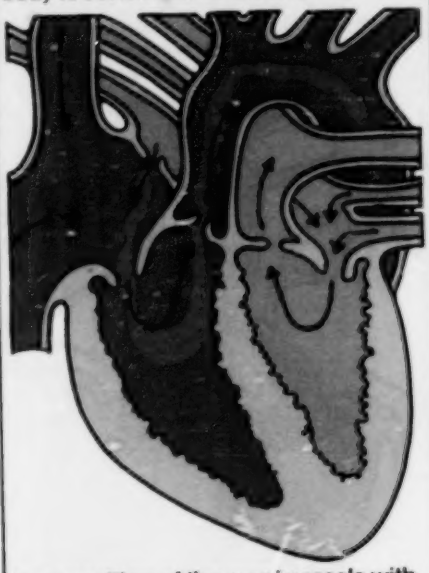
THROMBOSIS *(throm-bo'sis)*
The formation or presence of a blood clot (thrombus) inside a blood vessel or cavity of the heart.

THROMBUS *(throm'bus)*
A blood clot which forms inside a blood vessel or cavity of the heart. **See Embolus.**

TOXIC *(tok'sik)*
Poisonous.

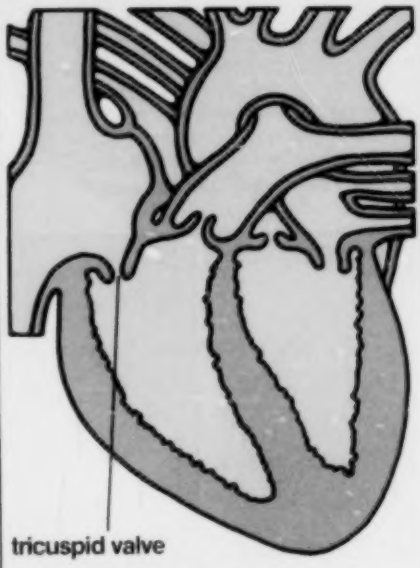
TRANSPLANTATION, HEART
The replacement of a healthy heart from a recently deceased donor into the chest of a person whose own heart can no longer function adequately. The donor's heart then replaces or assists the failing heart.

TRANSPOSITION OF THE GREAT VESSELS *(trans"po-zish'un)*
A congenital heart defect in which the two largest arteries occur in the wrong places: the aorta arises from the right (rather than left) ventricle and the pulmonary artery arises from the left (rather than right) ventricle. Thus the right heart pumps used blood from the body through the aorta and back to the body, and the left heart pumps oxygenated blood from the lungs back to the lungs. Only if there is a sizeable hole between right and left chambers (a septal defect) or a channel between the aorta and pulmonary artery (patent ductus arteriosus) will enough oxygenated blood get pumped to the body to sustain life for the infant.



transposition of the great vessels with atrial septal defect

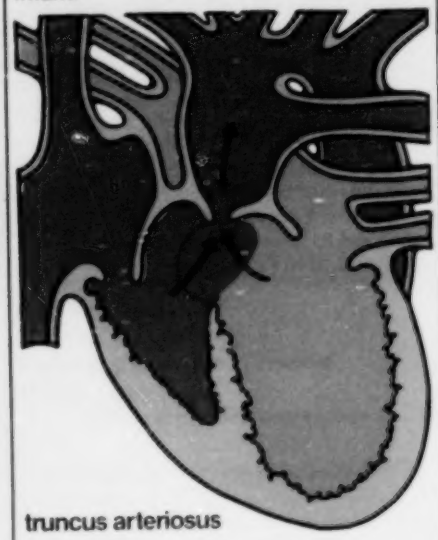
TRICUSPID VALVE *(tri-kus'pid)*
A valve consisting of three cusps or triangular segments located between the upper and lower chamber in the right side of the heart. Its position corresponds to the mitral valve (which is bicuspid) in the left side of the heart. **See Valve.**



tricuspid valve

TRIGLYCERIDE *(tri-glis'er-id)*
The main type of lipid (fatty substance) found in the adipose (fat) tissue of the body and also the main dietary lipid. High levels of triglycerides in the blood may be associated with a greater risk of coronary atherosclerosis.

TRUNCUS ARTERIOSUS *(trun'kus ar-te"re-o'sus)*
An arterial trunk arising from the fetal heart which develops into the aorta and pulmonary artery. It is a congenital defect if it persists past the birth of the infant.



truncus arteriosus

TYPE A BEHAVIOR
See Behavior, Type A and Type B.

TYPE B BEHAVIOR
See Behavior, Type A and Type B.

U

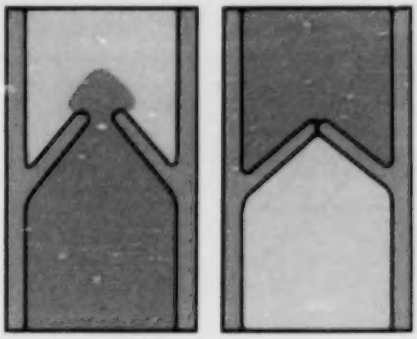
ULTRASOUND *(ul'tra-sownd)*
High frequency sound vibrations, not audible to the human ear. In a sonar-like application, it can be used by cardiologists for diagnosis. **See Echocardiography.**

UNSATURATED FAT *(un-sat'u-rat"ed)*
A fat whose molecules have one or more double bonds, so that it is capable of absorbing more hydrogen. **Monounsaturated fats**, such as olive oil, have only one double bond (the rest are single) and seem to have little effect on blood cholesterol. **Polyunsaturated fats**, such as corn oil and safflower oil, have two or more double bonds per molecule and tend to lower blood cholesterol. **See Saturated Fat.**

V

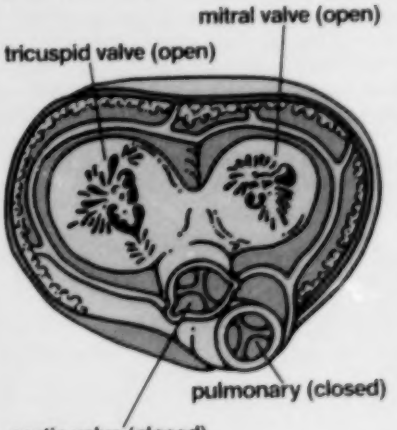
VAGUS NERVES *(va'gus)*
Two of the nerves of the parasympathetic nervous system which extend from the brain, through the neck and thorax into the abdomen. Known as the inhibitory nerves of the heart, they slow the heart rate when stimulated.

VALVE
A flap of tissue which prevents backflow of blood to keep it moving through the heart and circulatory system in the right direction. There are tiny valves along the inside of the veins and four large valves at the entrances and exits of the ventricles in the heart. **See Aortic, Mitral, Pulmonary, and Tricuspid Valves.**

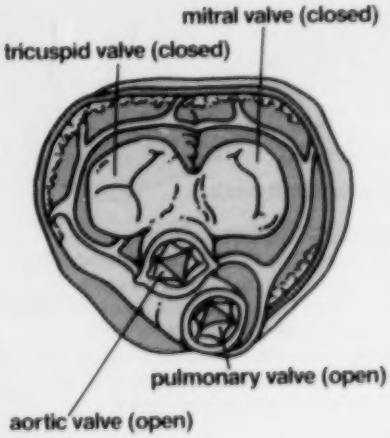


how a one-way valve works

the heart valves seen from above (atria removed)



DIASTOLE (relaxation phase)



SYSTOLE (contraction phase)

right side left side

VALVULAR INSUFFICIENCY *(val'vu-lar)*
Valves which close improperly and permit a backflow of blood in the wrong direction. **See Incompetent Valve.**

VARICOSE VEINS *(var'i-kos)*
Also called "varicosities" and "varices," they are swollen veins found most frequently on the legs, especially the calves. **See Varix.**

VARIX *(var'iks)*
A varicosity or abnormally swollen vein, artery, or lymph vessel. The plural form is "varices." Varices can occur in such locations as the esophagus, the anus, or the legs (where they are more commonly called "varicose veins"). **See Esophageal Varices, Hemorrhoids, and Varicose Veins.**

VASCULAR *(vas'ku-lar)*
Pertaining to the blood vessels.

VASO- *(vas'o)*
A combining form meaning vessel or duct.

VASOCONSTRICTOR *(vas"o-kon-strik'tor)*
Vasoconstrictor nerves are a part of the involuntary nervous system. When these nerves are stimulated, they cause the muscles of the arterioles to contract, narrowing the arteriole passage, increasing the resistance to bloodflow, and raising the blood pressure.

Vasoconstrictor agents (or vasopressors) are chemical substances which stimulate the muscles of the arterioles to contract. An example is norepinephrine (noradrenalin).

VASODILATOR *(vas"o-di-lat'or)*
Vasodilator nerves are certain nerve fibers of the involuntary nervous system which cause the muscle of the arterioles to relax, thus enlarging the arteriole passage, reducing resistance to the flow of blood, and lowering blood pressure.

Vasodilator agents are chemical compounds which cause a relaxation of the muscles of the arterioles. Examples are nitroglycerin and other nitrites, hydralazine, and many others.

VASOINHIBITOR *(vas"o-in-hib'i-tor)*
An agent which inhibits the action of the vasomotor nerves, that is, an agent which prevents the blood vessels from a normal response (constriction or dilation) to stimuli.

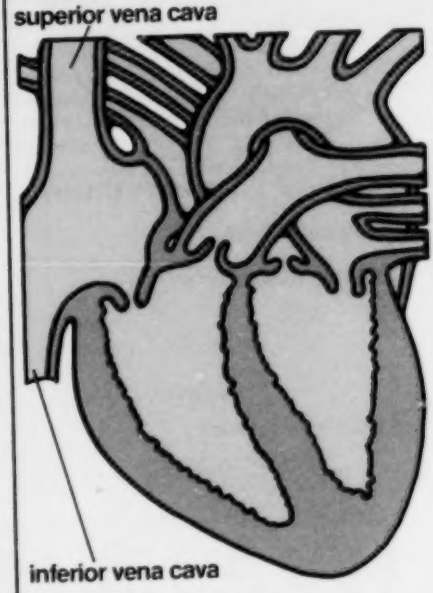
VASOMOTOR *(vas"o-mo'tor)*
Any agent (nerve or substance) that affects the caliber of a vessel, especially of a blood vessel, that is, any agent that is either a vasoconstrictor or a vasodilator.

VASOPRESSOR *(vas"o-pres'or)*
A vasoconstrictor agent. **See Vasoconstrictor and also Pressor.**

VECTORCARDIOGRAPHY *(vek"tor-kar"de-og'rah-fe)*
Determination of the direction and magnitude of the electrical forces of the heart by using electrocardiography in three dimensions.

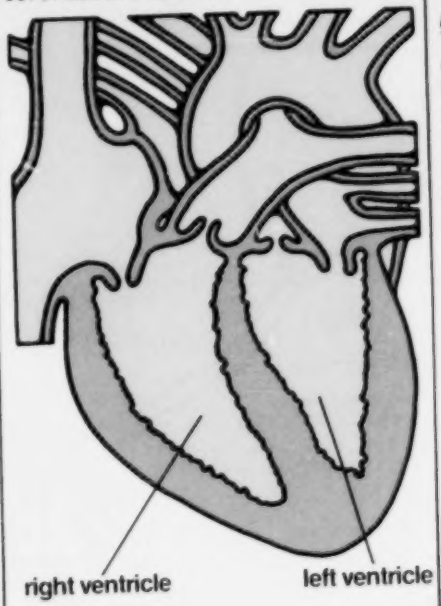
VEIN *(vain)*
Any one of a series of vessels of the vascular system which carries blood from various parts of the body back to the heart. All veins in the body conduct unoxygenated blood except the pulmonary veins which conduct freshly oxygenated blood from the lungs back to the heart.

VENA CAVA *(ve'nah ka'vah)*
One of the two great veins which conduct unoxygenated blood from the body to the right atrium of the heart. The superior vena cava brings blood from the upper part of the body (head, neck and chest). The inferior vena cava brings blood from the lower part of the body (legs and abdomen). Plural form is **Venae Cavae** *(ve'ni ka'vi)*.



VENOUS BLOOD *(ve'nus)*
Unoxygenated blood. The blood, with hemoglobin in the reduced state, is carried by the veins from all parts of the body back to the heart and then pumped by the right side of the heart through the pulmonary artery to the lungs where it is oxygenated.

VENTRICLE *(ven'tre-kl)*
One of the two main pumping chambers of the heart. The left ventricle pumps oxygenated blood through the arteries to the body. The right ventricle pumps unoxygenated blood through the pulmonary artery to the lungs. Capacity of each ventricle in an adult averages 85 cc. or about 3 ounces.



VESALIUS, ANDREAS (1514-1564)
Belgian anatomist who questioned many of the then current theories of the circulatory system as taught by Galen, chiefly the existence of openings in the wall dividing the left from the right side of the heart through which blood was believed to pass.

VISCERAL PERICARDIUM *(vis'er-al per"i-kar'de-um)*
The inner wall of the pericardium, the double-walled sac which surrounds the heart. The visceral pericardium closely adheres to the heart and forms the outermost layer of the heart wall and is also called the epicardium. **For illustration see Pericardium.**

W

WHITE BLOOD CELLS
One of the three kinds of formed elements found in the blood. There are various types of white blood cells. Their best-known function is defense: they destroy foreign bodies, such as bacteria, in areas of infection. Also called leukocytes. **See Red Blood Cells and Platelets.**

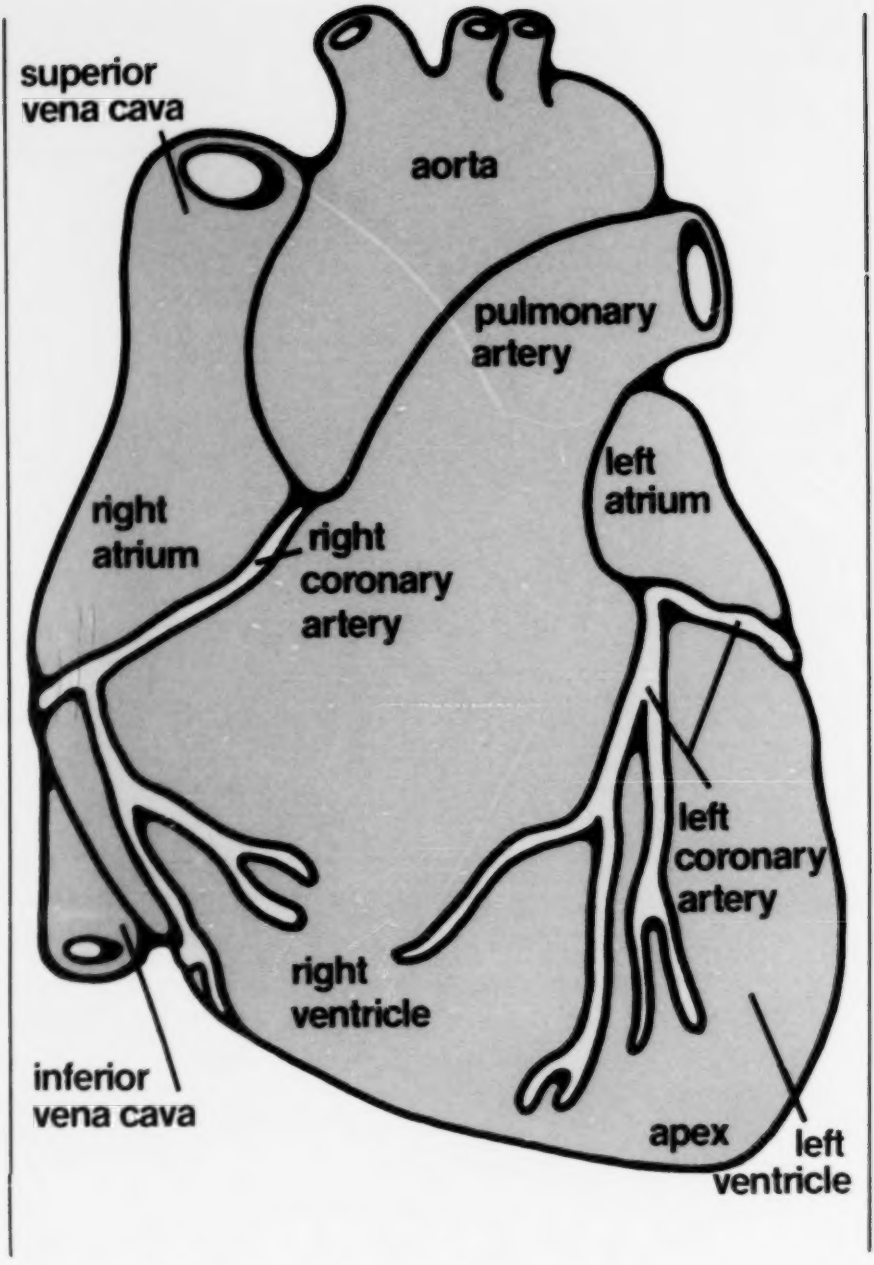
WITHERING, WILLIAM (1741-1799)
Eminent English clinician who discovered the use and proper dosage of digitalis in the treatment of heart disease. By analyzing the effective herbal mixture used by an old woman in Shropshire, he identified foxglove leaves as the active ingredient which influenced the function of the heart and kidneys.

WORK CLASSIFICATION UNIT
A community facility involving a team approach to assessing the ability of the cardiac patient to work in terms of the energy requirements of the job.

X

XANTHINE *(zan'theen)*
A class of drugs used among other things to increase the excretion of urine. A diuretic.

XANTHOMA *(zan-tho'mah)*
A new growth of skin occurring as small flat or slightly raised patches or nodules which are yellowish-orange in color. The various types of xanthomas are due to blood lipid disorders (hyperlipoproteinemias).


superior
vena cava
aorta
pulmonary
artery
left
atrium
right
atrium
right
coronary
artery
left
coronary
artery
right
ventricle
inferior
vena cava
apex
left
ventricle

IS+T

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